The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XXXIX. CHICAGO, ILLINOIS, JULY 19, 1902. No. 3.

Original Articles.

THE TREATMENT OF YELLOW FEVER.*

JAMES CARROLL, M.D.
CONTRACT SURGEON, U. S. ARMY.
WASHINGTON, D. C.

The treatment of yellow fever is a subject of very great importance and secondary only to the question of prophylaxis or prevention. We are now able, by promptly instituting the proper measures, to control the spread of this disease, and if the treatment of the persons already affected be successful, the excitement and panic that so frequently follow its invasion may be averted. It is important to bear in mind that the disease is one of short duration, and if the patient's strength and vitality can be maintained throughout the critical period his recovery is practically assured, provided, of course, that he was previously in good health and free from organic lesion.

Let us first review the treatment pursued by some of the older authorities and then, aided by the light of modern pathology, consider what modes of treatment will be simplest, safest and at the same time afford the best prospects for success to-day.

One of the earlier English writers on this subject, Richard Towne,[1] began his treatment by ordering the patient bled, to the extent of eight ounces, and that was to be repeated once in six or eight hours as long as the symptoms were not abated, lessening the quantity drawn each time. He then administered an emetic dose of squill, ipecac or tartar emetic. He directed that the patient be given liberal quantities of diluting, refrigerating and sub-acid drinks made with oranges, lemons, tamarinds; or the mineral acids in barley or spring water. He states that lemon juice diluted aids diaphoresis. He allowed slightly acid fruits, roasted plantains and bananas, guava jelly, etc., with barley water ad. lib. Toward evening he directed a clyster of cream of tartar and manna, and at night twenty-five drops of laudanum.

In the second stage he repeated the bleeding and applied wet cups and blisters. He insisted upon the necessity for absolute rest in the reclining position. Meats were forbidden and he only permitted panada or water gruel sweetened and slightly acidulated. Cooling and lenitive clysters once in eight hours and a good dose of laudanum at night sufficed for this period of the disease.

In the third or comatose stage he directed that blisters be applied freely to the neck, wrists, thighs and legs, but more especially a large one to the crown of the head, "to invigorate the circulation and give the spirits liberty to expand themselves." "To the soles of the feet," he says, "there may be applied lotions, plasters, pigeons killed and cut open, lungs of sheep, goats, calves, etc." Cordials and volatile salts were administered to comfort and refresh the languishing patient. Camphor in six-grain doses gave him remarkable results in the later stages, when the condition was critical. Finally he resorted to the use of powerful purgative clysters.

He believed, with others of his day, that the poisonous element was largely an excess of bile in the circulation, and blisters were frequently used, because the serum withdrawn by them being tinged with bile, it was thought a certain amount of the poison had been extracted with the serum. Active purgation was used to remove and prevent reabsorption of the supposed poisonous material excreted into the stomach and intestine.

Dr. Henry Warren,[2] who treated the disease from 1734 to 1738, condemned the use of calomel, emetics, purgatives and blisters and advised the use of mild laxatives in repeated small doses for several days. By these means he observed that putrid feces were expelled, the secretion of urine increased, the intestinal glands were cleansed and much of the corrupt and infected serum carried off. He wisely said that great care should be had to keep up nature's strength and spirits by giving now and then a little warm Madeira wine, Canary or such cardiacs as were not too inflaming. In his experience the nitrous and sub-acid remedies disturbed the stomach.

When seeing the patient for the first time he ordered a moderate bleeding, and that he be then covered with a blanket and made to perspire freely for twenty-four hours, or as long as the fever lasted, by the use of posset drinks. After the first day he allowed chicken broth as often as the patient desired it. He always found this useful and necessary to support the strength and counteract the exhaustion that would follow the free sweating. In addition he allowed now and then a glass of Canary or Madeira wine a little diluted, besides gruels and panadas with wine added to them, or sack-whey made richer than usual, and similar forms of light nourishment. If there had been no stool for three or four days he ordered a clyster of fresh milk and brown sugar or small doses of rhubarb and manna.

If there were frequent stools at a later period he deemed it of the highest consequence to suppress them promptly by the use of clysters containing Venice turpentine, Venice treacle or burned wine or brandy. He attached the greatest importance to the use of sudorifics.

Dr. John Redman of Philadelphia, the first president of the College of Physicians of that city and a teacher of the celebrated Dr. Benjamin Rush, read a paper before that body in 1793, in which he described his treatment of yellow fever in 1762. He is said to have been one of the most advanced and successful practitioners of his time.

He began his treatment with one-dram doses of that much neglected drug, Glauber's salts, repeated every hour or two for four, five or six doses until there were free evacuations. He saw the advantage of this in 1741 or 1742, during a previous outbreak, while he was a pupil to Dr. Kearsley, who had saved most of his patients by the use of it, while others who began with an emetic lost many or most of their patients. At the same time he ordered wine, vinegar-whey, thin gruel or barley water, raisin drink with wine, etc. On the second and subsequent days he administered one or two doses of the salts to insure having two or three stools a day. Along with these he gave teaspoonful doses of a neutral mixture to keep the skin moist. In the beginning he applied over the stomach an anodyne plaster of theriac, etc., which was renewed at frequent intervals.

The above-mentioned drinks were alternated with pleasant herb teas, water acidulated with the mineral acids, lemonade, weak cold punch, fruit waters or weak wine and water. In hemorrhagic cases he used mineral acids in all drinks and in addition gave red wine and water with a decoction of Peruvian bark and Virginia snake-root. He avoided venesection and emetics and believed that most other practitioners did the same, because of the disastrous results they had seen follow these measures in the former epidemic.

After the third day wine was given more freely and beef tea or chicken broth was added to the diet which was regulated by the taste and desire of the patient. Tea, coffee and weak chocolate were permitted under the same condition of their being agreeable to the patient. He laid stress upon the necessity for discharging the morbid matter as fast as possible, first by the *primae viæ* and then by the pores of the skin and urinary passages, at the same time stimulating the body by means of strengthening nutriment. He attached great importance to the use of mineral acids and sulphate of soda. His general line of treatment was rational and based upon sound principles.

Hillary,[3] who treated the disease in the West Indies from 1752 to 1756, declared that the objects to be obtained by treatment were the following: First, "to moderate the too great heat and rapid motion of the fluids, and abate the too great heat and violence of the fever, in the two first days of the disease, as safely and as much as we can. In other words, to diminish the fever." To attain this end he withdrew blood to the extent of from twelve to twenty ounces on the first and second days of the fever only. He strongly advised against bleeding after the second day, and when it was to be performed the quantity of blood to be withdrawn was determined by the general condition of the patient. The second indication was "to evacuate and carry out of the body as much of that putrid bile and those putrid humors as expeditiously and as safely as we possibly can."

He regarded the administration of emetics, so frequently practiced then, as dangerous and likely to prove disastrous. He ordered large draughts of warm water. After the vomiting excited by these had subsided he gave a grain or a grain and a half of extract of opium and nothing more was to be taken into the stomach for two hours. If the patient had had no stool a purgative clyster was given as soon as the vomiting had subsided and before the opiate had exerted any effect, and six or eight hours later a gentle purge. The treatment then followed was the administration of an infusion of Virginia snake-root with elixir of vitriol and Madeira wine. For nourishment barley water and wine-whey were given often and in small quantities during the first two days of the fever, and after the third day the quantity of wine was increased.

Dr. Brown of Boston[4] began his discussion of the treatment by citing from a letter written in September, 1798, by Dr. Mitchell, professor of chemistry and natural history in Columbia College, New York. Dr. Mitchell stated that in cases with symptoms of gastritis, anorexia, vomiting, etc., he had obtained happy results with watery solutions of lime, potash or soda, aided by a cathartic, such as castor oil, Rochelle salts, etc.

He wrote that the alkaline remedies were much used by the physicians of New York during the epidemic of that summer. They allayed anorexia, nausea and black vomiting. In some cases with high fever, dry skin, a full pulse, delirium, etc., he pronounced bloodletting a grand remedy and in many instances indispensable.

He exercised an admirable discrimination in the practice of venesection, in which regard he differed from Rush and others of his contemporaries, who advocated bleeding in nearly all cases.

He summarized the treatment as follows: At the onset a thorough evacuation by mercurial cathartics, by diaphoretics and by blood-letting; poultices, fomentations, pediluvia, cold and warm bathing, blisters, enemas, etc., according to the indications.

After one or two evacuations he gave mercurial pills in doses of one, two or three grains, frequently repeated, to insure an evacuation every day or every other day. The drinks were to be subacid, diluent or emollient and were continued until after the subsidence of the fever, when he advised wine, bark and other restoratives. The food was to be light and easily digested, generous and gently stimulating; to be given often and in small quantities.

For primary catharsis he preferred ten or fifteen grains of calomel with twenty or twenty-five grains of jalap; calomel was given subsequently in doses of one, two or three grains, as before stated. He cites Warren,[5] who asserted that it was the universal opinion of physicians in Boston that the most efficacious remedy, and the only one to be relied upon, was mercury. That in his observation more patients recovered under this treatment than under any other. It seems that he gave one-grain doses hourly until the patient was salivated, and he claimed by this means he effected a cure in all but two of his patients. Opium was frequently administered with the calomel to retain the latter in the intestine and insure its absorption. He was a strong advocate of the use of mercury in the form of calomel.

Brown tells us that "when there is a full, hard pulse, dry skin, great heat and violent pains in the head, stomach and bowels, bleeding is certainly an excellent remedy, if not a *sine qua non* of a cure." He applied blisters to the back of the neck, under the occiput or over the stomach to relieve pain, nausea, retchings or vomiting. Laudanum was used to quiet the stomach. Blisters were also applied to the temples, neck, back, thighs and arms, "to arouse the system from the torpor, low delirium and extreme debility of the second stage of the disease." Pediluvia with poultices were frequently used to moderate the violent determination of the blood to the head and to bring on perspiration, but for these purposes he preferred the warm bath.

He says that Drs. Rush and Griffiths advised bringing on a profuse perspiration by wrapping the patient in blankets and applying several hot bricks wet with vinegar to different parts of the body, giving at the same time repeated draughts of hot teas, lemonade or weak

punch, to be repeated once a day for four or five hours, as long as the fever continued.

Brown used cold bathing during the fever, either by sponging or by dashing the water upon the patient. When the stomach was extremely irritable he advocated the use of cathartic and nutritive enemata at frequent intervals. For this purpose he used chicken or veal broth or water gruel, and if a cathartic effect were desired a tablespoonful each of Glauber's salt, sweet oil and molasses were added.

In the early period large quantities of diluent and subacid drinks, such as toast-water, lemonade, tamarind water, apple or barley water, etc., were given, and later these were changed for porter and water, claret or milk and water. No food was given until after the crisis. Then feeding was begun with light, easily-digested foods, such as weak tea or coffee, thin porridge, roasted or baked fruits, chocolate, sago, weak chicken or veal broth.

Lind[6] relied mostly upon tartar emetic and blisters together with the administration of Peruvian bark. He attributed great virtues to fresh air, because he noted that sailors often recovered without treatment or care, while patients removed to hospitals died in spite of his best treatment, which was hardly to be wondered at.

Rush, who was a follower of Sydenham, carried the practice of venesection to excess. In a published table[7] he enumerates twenty-three patients, each of whom was bled from three to thirteen times, and from each of whom he drew, in all, quantities of blood varying from fifty to one hundred and fifty ounces. He carried the administration of mercury to the same extreme, for he states[8] that he gave to one patient one hundred and fifty grains of calomel in six days. He thought this a large quantity until he read that Dr. Chisholm gave four hundred grains to one patient in the course of his fever, and to another fifty grains at a single dose three times a day.

His general treatment was bleeding, purging, blistering, the use of cold water internally, externally and by means of clysters. He condemned the use of stimulants and found niter and antimonials to be ineffectual. He ascribed great value to blisters and aimed to induce salivation with calomel. He declares that in 1794 he was delighted with the effect of salivation in every case in which it occurred. As compared with some other physicians, however, Rush used calomel in moderation, for La Roche cites instances in which patients were given from one to several thousand grains of calomel during the course of an attack.

Currie[9] objected to the use of mercury on the ground that it protracted the fever and retarded the cure. He asserted that in all malignant cases in which he saw it used, whether in large or small doses, it hastened the end. He made exception in cases where there was coma with dilated pupils. In these he stated that it had saved many lives when given in large and repeated doses. The treatment by sweating accompanied by cordial and stimulating remedies he regarded as not only unsuccessful but pernicious. Bleeding and catharsis he considered to be of the greatest benefit during the three first days in inflammatory cases. In adynamic cases he asserted these measures did manifest and irreparable injury. The cold bath and the use of wine, bark and opium were all condemned by him. The juices of lemons, oranges, grapes and currants he found to be grateful and beneficial.

Clark,[10] who treated yellow fever in the West Indies in the time of Rush and Currie, was opposed to bleeding in most cases. Mercury was his "sheet anchor." He generally ordered a pediluvium and a purging clyster at first, then a large dose of calomel and jalap, and repeated small doses until a free movement had been obtained. Saline draughts, given while effervescing, checked the vomiting and were serviceable during the first stage of the disease. He encouraged perspiration by giving warm drinks when the vomiting was not too violent. He found that excessive vomiting and purging were generally restrained by opium: he gave as much wine and opium as the stomach could bear; if the purging was free he gave chicken broth with sago or panada, Madeira wine or old hock, and he laid great stress upon giving nourishment and wine frequently. He attached great importance to careful nursing and the necessity for early treatment, and said that in the worst cases or those neglected at the beginning, no remedy seemed to retard or arrest the disease.

La Roche,[11] whose treatise on yellow fever is without doubt the most exhaustive one in the English language, divides the cases according to their severity into three classes.

First, those in which the patient appears to be stricken with death from the beginning. In these no treatment avails and recovery, where it occurs, is due, not to treatment, but to the vital resisting power of the patient.

Second, those cases which are so mild as to recover spontaneously without any treatment, or under the influence of any rational or even irrational management.

Third, those in whom the disease assumes an intermediate grade, whose chances of life or death are equally or nearly balanced, and in whom, consequently, it becomes an object of the utmost importance to apply means calculated to produce a favorable impression, and thereby arrest the dangerous tendencies.

He says we must, while watching carefully the course of the disease, prevent undue mischief being done, especially to organs essential to life. We must keep these organs in as healthy a condition as possible—restore, if possible, equilibrium in the play of the functions—reduce undue and dangerous excitement, and sustain the powers of life when these threaten to become impaired or are greatly reduced beyond the point of safety. Beyond this art is of little avail.

He quotes Harrison[12] as follows: "Accidents or acts of imprudence which, in other diseases, are mere trifles, are of tremendous importance in this. The mere getting out of bed has cost many a man his life. A man in this disease, however safe the physician may think him, is hovering between life and death—a trifle may decide his fate." (This fearful truth is too often only sufficiently impressed upon the physician after he has seen a number of deaths occur in patients whose condition would ordinarily excite no apprehension.)

La Roche insists upon the necessity for absolute rest in bed and cleanliness. In cases of the so-called inflammatory type he concludes that the experience of innumerable observers shows that sanguine evacuations—bleeding—and purgation are indispensable parts of the treatment. He says it is everywhere conceded, even among physicians who are opposed to sanguine evacuations, that in the first stage, antiphlogistic, sedative and evacuant measures must be resorted to, due care being exercised not to reduce the strength of the patient beyond the power of recuperation. He advises, in the congestive forms, external stimulation by means of rubefacients; hot baths, sinapisms, vesicants, etc., must be resorted to, with the internal use of stimulants, tonics, etc., by the stomach or bowels, and in milder cases stimulating and mercurial cathartics with general and topical bleeding to relieve congestion, when it can be done. He disap-

proves the use of emetics and finds the use of purgatives universally advocated.

Dr. Andrew Davidson[13] states that in the milder form little more will be necessary than a hot mustard footbath and a purgative. When the temperature is moderate, the skin moist and irritability of the stomach absent or trifling, a meddlesome line of treatment is to be avoided. As a purgative he mentions castor oil in capsules or emulsion, or ten grains of calomel with or without jalap. He insists upon the necessity for obtaining and keeping up a free action of the bowels. As an antipyretic he suggests antipyrin if the condition of the heart will permit its use. The common saline mixture containing acetate of ammonium, nitrate of potassium and spirit of nitrous ether will promote the action of the skin and kidneys and five to ten drops of the tincture of veratrum viride can be added if the arterial excitement be great. He favors the sponging of the body with cold or tepid water and the application of ice-cold cloths to the head. A few drops of chloroform or one-drop doses of creasote to relieve gastric irritability. He refers to the use by Dr. Physick and Dr. Rush of ten-drop doses of oil of turpentine in syrup; the latter used it with success even in the later stages of the disease. The use of opium he regards as dangerous, even though it allays gastric irritability. He advocates the use of milk and lime water and the swallowing of small morsels of ice. A large sinapism should always be applied over the epigastrium.

In the third stage, when vomiting is urgent and prostration extreme, moderate doses of iced champagne should be given frequently. Perchlorid of iron has been given with apparently good results in arresting the hemorrhages.

He refers to the success obtained by Sternberg's method of treatment in which the mortality was only 7 3-10 per cent. in 374 cases in the United States, Cuba and Brazil. I shall refer to this again later.

Touatre[14] of New Orleans gives the therapeutic treatment of yellow fever as "rest, aëration of the sick room, the administration of warm drinks in abundance and of liquid food, such as milk and thin broth." He states the two principal indications of treatment as follows:

1. To strengthen and sustain the organism by fortifying the nervous system, by arresting congestion and by increasing blood pressure and diuresis. To meet this he uses cold sponging and cold bathing.

2. To consume, destroy and eliminate the toxin. This is met by aëration of the sick room and by the administration of two, three or four quarts of Celestin's Vichy water in twenty-four hours.

Our interpretation of the result of this admirable line of treatment would be that the cold sponging reduced temperature, promoted the action of the skin and perhaps toned the nervous system. It certainly induces a feeling of comfort. The Vichy water, by promoting active diuresis, ameliorates all the symptoms by rapidly eliminating the toxin that produces them. This eminent observer, who passed through nine epidemics in thirty-three years' study of the disease,[15] makes the following statements which are true and worthy of the greatest attention: "At the outset of the infection the patient can be succored, but what can be done when the organism is poisoned, when the toxin has already affected the hepatic cells and the renal parenchyma, and when the mucous membranes are bleeding? The physician is practically disarmed, for such lesions are nearly always fatal. It is during the three first days of the disease that the physician must act. When black vomit has come to darken the situation, we can yet save some patients, but we are much better prepared to prevent the occurrence of black vomit than to cure it. The first and most indispensable thing for success in the treatment of yellow fever is that it be begun as soon as the disease has declared itself."

At the onset he always ordered a hot mustard footbath to relieve congestion and produce diaphoresis; a small dose of calomel, more as an intestinal antiseptic than as a purgative, and an enema consisting of a tablespoonful of sulphate of soda or magnesia in a pint of warm water every morning and night throughout the course of the disease.

He allowed no nourishment whatever during the first seventy-two hours of the fever unless the temperature fell below 102 F., in which case he ordered milk and Vichy every four hours. With the temperature above 102 F. he gave only Vichy during the three first days. This usually allays nausea and vomiting, and if it is not retained he injects it slowly into the bowel at frequent intervals. For black vomit he advises the application of an ice bag over the epigastrium.

Izett Anderson,[16] after thirty-four years' experience with yellow fever in the West Indies, commenced the treatment by giving from six to ten grains of calomel combined with the compound rhubarb pill or colocynth and hyosciamus. This was followed three or four hours later by a purgative of magnesium sulphate, two drams, magnesium carbonate and potassium carbonate of each one scruple, with a tablespoonful of fresh lime juice, to be taken ice cold and while effervescing. This was repeated every third hour until the bowels had acted freely. This ingenious combination shows a wise determination to act upon the kidneys as well as the bowel. The systematic treatment after this was still diuretic and consisted of a neutral mixture composed of thirty grains of potassium bicarbonate and a dessertspoonful of freshly expressed and strained lime juice with three grains of carbolic acid. This was given every second or third hour, ice cold and while effervescing, unless the gas appeared to disturb the stomach, in which case it would be given after effervescence had subsided. High temperature in the early stage was treated by the wet pack. He states that since the adoption of this method of treatment he has never met with any cases of hyperpyrexia requiring other special treatment, nor has he encountered the profuse and uncontrollable black vomit that he had previously met with. For partial suppression of urine he used dry cups, warm turpentine stupes, acetate and citrate of potash, but he had most faith in dram doses of spirit of nitrous ether given every hour. If there were signs of heart failure he used strychnin and alcoholic stimulants. The only food allowed throughout the attack was ice-cold milk with lime water, and in some instances albumin water. No gruels, paps or broths were permitted until the beginning of convalescence. Stimulants were never used until the second stage, and he preferred a sound, iced, Rhenish wine, which proved of the highest value.

Loomis[17] favored the diaphoretic and expectant plan with the use of cracked ice, milk and lime water or hypodermic injections of morphia for nausea and vomiting, cold compresses for hematemesis and the judicious use of stimulants to counteract exhaustion.

Osler[18] states that careful nursing and a symptomatic plan of treatment probably give the best results. He advises hydrotherapy for the fever, morphia hypodermically and ice in small quantities for the vomiting, and the hot bath for uremic symptoms. Stimulants are to be used

freely during the second stage and the patient is to be carefully fed, using nutrient enemata if the stomach be irritable.

Strümpell[19] says that the earlier proper treatment can be instituted the better. He advocates absolute rest; evacuation of the bowel; a hot mustard foot-bath early in the attack; opium or morphia for lumbar pains; sinapisms, ice and hydrocyanic acid or chloroform for gastric irritability; cold spongings, the wet pack and cold bath for high fever.

Sternberg's treatment, referred to by Davidson[20] has given phenomenal results. In 374 cases treated in the United States, Cuba and Brazil, the mortality was only 7 3-10 per cent. It is not to be believed that such brilliant results can ever be exceeded by any other single line of treatment. A greater percentage of lives has been saved by it than by the use of the Brand method in typhoid fever. The Brand method reduced the mortality in typhoid fever from about 14 to 7.5 per cent.;[21] the Sternberg treatment reduced the mortality of yellow fever from at least 20 or 25 per cent. to the same figure.

In addition to the administration of bichlorid of mercury and sodium bicarbonate, the special treatment he advises is as follows:[22] A hot mustard foot-bath during the first twenty-four hours; cold sponging; cold applications to the head; protection of the patient from currents of air; sinapisms over the stomach and lumbar region when called for; the promotion of perspiration, and the withholding of food during the first three days; stimulants in the form of iced champagne or good brandy after the fourth day. If the stomach be irritable he advises milk and lime water, and if this do not agree, nutrient enemata. Later on he allows milk punch, ale, porter, etc.

Having reviewed the older as well as the more modern methods of treatment we are in a position to profit by the experiences of the numerous observers who have placed their methods and results on record.

In yellow fever we are dealing with a disease of short duration and one that tests severely the vital powers of the patient. I believe, however, that in previously healthy, non-debilitated subjects, free from organic lesions, the mortality can be reduced practically to zero by careful and judicious treatment instituted in the incipiency of the attack. On the other hand, if there be present debility from any cause, anemia, organic lesions of the heart, liver or kidneys, the outlook is always serious and recovery doubtful. The treatment must be essentially eliminative and supporting, with the incidental use of measures tending to reduce hyperpyrexia, relieve pain and nausea and remove internal congestions.

Before taking up the treatment in detail it will be better to consider briefly the conspicuous pathological lesions that are present and the deductions to be drawn from them. In the first place, the lesions and symptoms are produced by a powerful toxin circulating in the blood and tissue fluids. This poison appears to act with greatest intensity upon the liver and next upon the kidneys. The changes in the liver are at first a congestion, which is followed by cloudy swelling, granular and fatty degeneration with more or less extensive cell necrosis. In cloudy swelling the organ is enlarged and firm, and a great deal of the blood is displaced by the pressure of the swollen cells upon the capillaries. With granular and early fatty degeneration the swelling and pressure are slightly increased so that there is considerable obstruction to the flow of blood through the organ. Practically all of the blood supplied to the liver comes through the portal vein, in which the pressure is very low, and any serious obstruction to the flow of blood through that viscus will necessarily result in a damming up of blood primarily in the portal vein, secondarily in the vessels from which it receives its supply.

Of these the duodenal and pyloric veins are the shortest and have the least communication with other vessels. On the other hand, the mesenteric veins are of greater length and are distributed over large areas. Hence the passive congestion and hemorrhages which result from obstruction to the portal circulation, when of rapid onset, are more intense and manifested earlier in the pylorus and duodenum than in other portions of the small intestine. This explains the pain and tenderness on deep pressure in the epigastric region, which is so early and constant a symptom in yellow fever and which is the result, not of a specific action of the toxin upon the mucous membrane itself, but of obstruction to the portal circulation, causing a backward pressure along these short vessels—the pyloric and duodenal veins—that promptly affects the rich capillary plexus in which each of them originates. The hemorrhages which occur later result from capillary stasis, aided, possibly, by a condition of toxemia.

That this is probably the correct explanation appears from the fact that we find the same condition of the gastro-intestinal mucous membrane with hemorrhages, black vomit or bloody discharges, in other conditions than yellow fever, where the liver is seriously damaged. I refer to advanced cirrhosis, acute yellow atrophy, acute phosphorus poisoning and excessive fatty degeneration with cell necrosis, occurring with or without infection. And more than this, in these latter conditions the patient dies with the same cerebral, eclamptic or so-called uremic symptoms that we see so very frequently in this disease. And further, the autopsies and subsequent microscopic examinations develop the fact that in numerous instances the liver and not the kidney is the organ most seriously affected. This statement applies also to yellow fever, and I believe that the supposed uremic condition in this disease is often more probably one of poisoning from the accumulation in the circulation of the organic ammonia compounds which the liver normally converts into urea, with other waste or end products, the constitution of which is not well known, though some of them are thought to be of an acid nature. These are developed as the products of proteid digestion and as the nitrogenous end products of cell metabolism throughout the body largely in the form of carbonate, lactate and perhaps carbonate of ammonium.[23] Where the liver loses its functioning power, therefore, there must be a deficiency in urea,[24] and the kidneys cease to secrete urine because urea, the normal stimulus to that function, is absent. Osler[25] states that there are cases in which anuria is prerenal, and among the conditions in which this occurs, he mentions fevers and inflammations, acute poisoning by phosphorus, etc.; in the collapse after severe injuries or operations, and "in the collapse stage of cholera and yellow fever."

About two years ago I performed an autopsy on a woman who died with uremic symptoms on the third day following a laparotomy. The wound was found to be perfectly healed and there were no signs of inflammation. The kidney changes found on macroscopical and microscopical examination were comparatively insignificant while the liver showed excessive fatty degeneration with some cell necrosis and a beginning hypertrophic cirrhosis. Cultures from the abdominal cavity, blood, liver, kidney and spleen were all negative. I believe now that death was due to the inability of the previously

fatty and cirrhotic liver to dispose of the products of greatly increased cell metabolism, the result of the operation. As there appeared to be a deficiency of bile, the case was supposed to be one of acholia.[26]

It is quite plain from our text-books that retention of urea in the blood is not always the cause of "uremic symptoms." In some cases, no doubt, where the liver and kidney are both seriously at fault, the condition may be one of combined uremia and ammonemia or other intoxication. Urea seems to exert a toxic effect only when it is present in large amount, and patients frequently recover from pronounced attacks of uremia even in scarlet fever.[27]

Urea may be present in the blood in large quantity without producing symptoms,[28] and in uremic conditions ten to fifteen times the normal amount of urea is sometimes found in the blood. Loomis[29] states that after withdrawal the blood of yellow-fever patients undergoes ammoniacal decomposition, and some affirm that the blood contains free ammonia. According to Joseph Jones[30] of New Orleans, yellow fever blood contains abnormal amounts of urea, extractive matter and ammonia. But carbonate of ammonia is scarcely ever found in the blood of uremic patients, and the theory of the decomposition of urea into ammonia in the blood is untenable.[31] La Roche found the blood in yellow fever to be acid or neutral to litmus.[32]

The primary indication in the treatment of yellow fever is to remove the immediate cause of the condition present, viz., the toxin. This is best and most expeditiously effected through the normal channel with the urinary secretion, aided by a moderately free action of the skin and moderate depletion of the digestive tract by the use of mild saline cathartics. With the evacuation of these fluids and the toxin they contain the symptoms abate—speaking of the early stage—and the stomach will retain an increased amount of fluid to replace that which has been removed. Care should be taken to maintain one or more of these functions throughout the attack, sustaining the patient's strength by the judicious use of the appropriate stimulants. It is much to be regretted that we have no means of acting directly upon the liver.

In the earliest stage a hot mustard foot-bath is of great service and should be used as a matter of general routine when the case is seen sufficiently early. It relieves internal congestions, lessens the headache and promotes diaphoresis. From personal experience I think more stress should be laid on the necessity for confining the hot mustard foot-baths to the earliest stage as laid down by Sternberg and nearly all writers. In my own case it was used for the first time on the third day, and I shall never forget the effect of it. Within about half an hour after the removal of the bath and while I was oppressed by the weight of a heavy load of gray blankets, I felt a sudden pain and embarrassment at the heart. The pain was very acute and accompanied by a feeling of distension, as if the organ was much distended and was being arrested in diastole. Happily, it lasted but a few moments. This was the only time I felt myself to be in imminent danger. The bath was not repeated and there was no recurrence of the paroxysm.

If nausea be present a sinapism should be applied over the region of the stomach and the same application should be used for pain in the lumbar region. Cold applications afford most relief for the pain in the head. The muscular pains usually become ameliorated after a few hours, and it is best not to administer remedies for them unless they are unusually severe, in which case it would be permissible to use very small doses of antipyrin or phenacetin. It is advisable and probably necessary to give a mild cathartic at the beginning; say several one-sixth grain doses of calomel or three or four grains each of calomel, rhubarb and soda in capsules. These should be followed by several dram doses of sulphate of soda at hourly intervals until there is a free evacuation. In small doses this salt is diuretic as well as laxative, and, in my opinion, it is the least disagreeable of the saline cathartics. The nauseating effect of castor oil should forbid its use unless the patient expresses a preference for it. The routine administration of a tablespoonful of sulphate of soda in a pint of warm water as an enema, night and morning, as practiced by Touatre, seems to me an excellent plan. The patient should be encouraged to take plenty of fluid in small quantities at frequent intervals or cracked ice if there be nausea or irritability of the stomach. In this case it would be well to try also small quantities of milk and lime water, carbonated Vichy or an effervescing neutral mixture given ice cold. My preference is for carbonated Vichy *ad libitum*, and if it be not obtainable, the neutral mixture prepared with fresh lime juice as used by Anderson, but omitting the carbolic acid. This mixture should be neither acid nor alkaline, but neutral.

If sufficient fluid cannot be taken by the stomach, give very slowly high rectal injections of warm or tepid water to which may be added bicarbonate of sodium, sulphate of sodium, chlorid of sodium, citrate of potassium or any of the simple alkaline diuretics. Bicarbonate of sodium is probably the best because it is said to exert a soothing effect upon the mucous membranes in general, and should be easily retained. As the purpose of this injection would be chiefly to secure absorption of the fluid and its effect upon the kidneys, it should not be too cold. I have seen patients complain bitterly after the use of ice-water enemata. If the temperature be high and the skin dry, cold or tepid sponge baths will give comfort and aid the action of the skin; at the same time half-dram doses of spirit of nitrous ether could be given every half hour until the skin became moist or the temperature began to decline.* The quantity of urine passed must be carefully noted; it is often necessary to use the catheter. If the pain in the lumbar region be severe and the bladder remain empty, the patient should be placed into a warm bath to which a little mustard has been added and kept there until the skin becomes reddened. This should be used only in the first stage, to relieve congestion and determine the blood to the skin. If the temperature be moderate, the skin moist and the bowels and kidneys active, the patient should be given absolute rest in bed in a well-ventilated, slightly darkened room. He must be lightly covered and protected from draughts. The use of mosquito nets and wire screens is an important adjunct to the treatment.

All food should be withheld during the first three days with the possible exception of milk and lime water or milk and Vichy if it be well retained. Should the patient desire it, I would not hesitate to give an occasional small dose, say two or three drams, of champagne, ice-cold and diluted. Besides being a grateful stimulant, it quiets the stomach and retards tissue waste. The necessity for buoying up the heart is apparent when we consider that the passive congestion of the stomach and intestine is best relieved by strengthening the circulation until the cause can be removed by elimination.

* There seems to be a hesitancy to use diuretics in this disease probably for fear of damaging the kidneys. No simple drug will do so much damage as the toxin. If this poison be freely eliminated, the subsequent course of the disease will be modified.

In the selection of an agent for this purpose there is room for choice. The sodium salt appears to possess several advantages. It is the normal alkaline base of the blood plasma; it is bland, non-irritating, acceptable to the stomach, and mildly diuretic; and, according to high authority,[33] "it is reported to be singularly efficient in the suppression of urine from renal disease." We must not lose sight of the reported diminished alkalinity of the blood in this disease and the possibility that this may be due to the presence of an acid poison which is neutralized by the sodium salt. In the Sternberg treatment, about two and one-half drams of the bicarbonate of sodium are administered in twenty-four hours. The Vichy water treatment is practically treatment by bicarbonate of sodium.

Sulphate of sodium, the value of which was first shown by Dr. Kearsley of Philadelphia in 1741, is endorsed by Dr. Touatre of New Orleans, and Surgeon R. D. Murray of the Marine-Hospital Service gives it the preference over other salines.[34] A good dry champagne is the best stimulant to begin with; when the patient tires of it a sound Rhenish wine should be substituted; Dr. Murray has had good results with dry catawba.[35]

If there are signs of heart failure, strychnin should be used freely. If the patient is not seen until the second stage the treatment must be symptomatic. For vomiting, ice bags to the epigastrium are probably the best remedy; they can be supplemented by small doses of cocain and hypodermics of morphin according to indications, but carbonated Vichy, lime water or champagne will probably prove sufficient unless black vomit has set in or is impending. In this case turpentine has been recommended and is worth considering on account of its properties as a local and general stimulant, hemostatic and diuretic. Tincture of capsicum is also said to be a valuable local and general stimulant in this condition. The patient's strength must be sustained as far as possible, the action of the kidneys encouraged through absorption of fluid from the bowel and the blood determined to the surface by friction of the skin with mustard water. The value of the hot-air bath in cases of anuria is too well known and appreciated to require more than a mention of it. Whether the poisonous agent be urea or any other soluble substance it is equally important to secure its elimination by this or any other method.

The nutrition of the patient is a subject well worthy of consideration. Food is frequently withheld for varying periods from three to five days or a week; in my own case I think for at least eight days nothing was allowed but water, Apollinaris, ice and champagne. Now, during all this time certain cells of the body are functioning and using up their own protoplasm, for in conditions of anemia, debility or malnutrition and in the infectious diseases we know that the cells of the vital organs undergo degeneration and often necrosis from lack of nutritive material. In specific fevers the functions of some of these cells are greatly stimulated. The proteid constituents of the cells are consumed in the performance of these functions,[36] and converted into waste material and end-products which add to the general intoxication. Physiologists teach us that there are certain foods that will prevent this degeneration of the cells to a considerable extent by saving their proteid constituents.[37] Among these are gelatin and fat, non-proteid foods, the latter of which, in the form of olive oil, has been used with marked success by Spanish physicians in the treatment of yellow fever. According to La Roche, of thirty-six patients admitted to the hospital at Vera Cruz with black vomit, no less than thirty recovered after treatment by inunction with the heated oil,[38] and other equally remarkable results are mentioned. In another place we find that Father Constans acquired a great reputation in Spain in the early part of the nineteenth century, in the treatment of yellow fever, and his chief reliance was olive oil which he gave in large doses. The rationale of this treatment seems to be that the oil is highly nutritious, a proteid saver, and is readily absorbed by the epithelial and endothelial cells of the capillaries. In this way the integrity of the latter is preserved and hemorrhage prevented. Pathology teaches us that where there is capillary blood stasis, hemorrhage soon takes place from deprivation of nutriment, the endothelial cells of the capillaries being nourished by the blood that circulates within the vessels. This suggests the early administration of olive oil in emulsion with lime water.

Animal foods have long been condemned, but the use of toast-water or thin barley, rice, sago or hominy water, after prolonged boiling and salting, are probably advantageous. Some of these are strongly advocated by Surgeon Murray[39] and the older observers, and one can readily believe that the starches they contain would be of service in restoring the functioning power of the hepatic cells. Murray also records eighty cases that were fed on ice cream, *ad libitum*, with only four deaths. And ice cream is rich in fat. So that if the stomach is reasonably quiet, we can safely satisfy the gnawings of hunger by the use of barley, rice or toast-water, milk and Vichy or lime water, ice cream, lemon jelly and fruit juices in addition to mild stimulation and the use of olive oil internally or externally. To withhold all nourishment throughout the course of the fever seems injudicious and unsafe. With the temperature below 102 degrees F., and the stomach quiet I believe the patient will be greatly benefited by small quantities of such of the foods mentioned above as his taste may call for.

The early involvement of the liver as indicated by the early lesion in the duodenum naturally suggests an equally early defect in the functioning power of the liver in the elaboration of urea. This deficiency which must sooner or later become marked, is manifested in the failure of the kidneys to secrete the normal amount of urine. As the rate of elimination by these organs increases normally with an increase in the urea in the blood,[40] it would seem justifiable to supply the defect by the medicinal administration of urea either through the stomach or by hypodermic injection, as soon as the ordinary remedies cease to have the desired effect. The injection of urea into the blood soon evokes a very copious secretion of urine, "even if, previously to the injection, the secretion had been at a standstill."[41] We can hardly do better than follow Nature's method of stimulating these organs to perform their normal functions. And the danger of an excessive accumulation of urea in the blood must be very slight in a condition where that substance is manifestly deficient. The longer the kidneys are permitted to act imperfectly, the greater will be the retention of toxins which will react by increasing the damage already done to both liver and kidneys. This is not by any means a new suggestion, for urea was proposed as a diuretic by the older French physicians and it was used by Prof. Mauthner[42] of Vienna. Fifty years ago Dr. T. H. Tanner[43] of London reported success with it in cases of dropsy. In one case he used ten grains every six hours for nine days with the effect of increasing the flow of urine from 14 to 44 ounces in twenty-four hours; during the nine days the quantity

passed varied from 35 to 49 ounces. It was then discontinued because the dropsy had been removed. After three weeks it was again resorted to with the same satisfactory results.

In my opinion the services of trained female nurses are indispensable to secure the very best results. They should be under strict discipline, and the tour of duty with patients who are seriously ill should be eight hours in twenty-four.

The physician should not treat his patients by proxy, but should assure himself that his line of treatment is being faithfully carried out. All meddlesome medication should be prohibited.

It is well to bear in mind the possibility of the occurrence of complications through secondary infection by the streptococcus, staphylococcus, colon bacillus or bacilli of the hog cholera group, known also under the name of *B. icteroides, B. enteritidis,* paracolon, paratyphoid, etc.[44] The chances for the occurrence of such infection will probably be greatly diminished by the early institution of such treatment as will best maintain the integrity of the intestinal mucosa and conserve the patient's strength.

BIBLIOGRAPHY.

1. Diseases of the West Indies, London, 1762.
2. Treatise on the Malignant Fever in Barbadoes, London, 1740.
3. Rush's Hillary, Philadelphia, 1811.
4. A Treatise on Yellow Fever, Samuel Brown, M.B., Boston, 1800.
5. Tytler, p. 503, given by Brown.
6. Diseases of Hot Climates, London, 1808.
7. Medical Inquiries, Benjamin Rush, M.D., Phila., 1805, vol. iii, p. 407.
8. Medical Inquiries, Philadelphia, 1815, pp. 220 and 223.
9. The Malignant Fever in Philadelphia in 1793, William Currie, Philadelphia, 1800.
10. Yellow Fever in the Island of Dominica in 1793-4-5-6, James Clark, M.D., London, 1797.
11. Yellow Fever, Philadelphia, 1855, vol. ii, p. 626, et seq.
12. New Orleans Medical and Surgical Journal, ii, p. 322.
13. Allbutt's System of Medicine, vol. ii, 1897.
14. Yellow Fever, by Just Touatre, M.D., New Orleans, 1898, p. 164.
15. Ibid., Introduction, p. 9.
16. Yellow Fever in the West Indies, London, 1898.
17. Practice of Medicine, Alfred L. Loomis, New York, 1885.
18. Practice of Medicine, New York, 1898.
19. Text-Book of Medicine, American Edition, New York, 1893.
20. Allbutt's Practice of Medicine, vol. ii, Article on Yellow Fever.
21. Osler: Practice of Medicine.
22. Buck's Reference Handbook, New York, 1889, vol. viii, p. 71.
23. Text-Book of Physiology, Schäfer, London, 1898, vol. i, pp. 906, 908. Practical Urinalysis, Purdy, 4th Edition, pp. 22 and 23; and Clinical Diagnosis, Simon, 1897, pp. 325, 330.
24. Clinical Diagnosis, Von Jaksch, Translation, London, 1890, p. 278.
25. Practice of Medicine, New York, 1898, p. 851.
26. Text-Book of Medicine, Strümpell, Am. Ed., 1893, p. 489.
27. Strümpell: Ibid., p. 42.
28. Practice of Medicine, Loomis, 1885, p. 538.
29. Ibid., p. 651.
30. Transactions of the First Pan-American Congress, vol. ii, p. 1289.
31. Strümpell: Ibid., p. 831.
32. La Roche on Yellow Fever, Philadelphia, 1885, vol. i, p. 172.
33. The National Dispensatory, 5th Edition, Philadelphia, p. 1456.
34. Annual Report of the Surgeon-General of the Marine-Hospital Service, 1898, p. 305.
35. Ibid., p. 309.
36. General Pathology, Thoma, English Edition, vol. i, p. 415.
37. Text-Book of Physiology, Schäfer, London, 1898, vol. i, p. 878.
38. La Roche, vol. ii, p. 724.
39. Loc. cit., p. 305.
40. Am. Text-Book of Physiology, 1900, vol. i, p. 255.
41. Text-Book of Physiology, Schäfer, London, 1898, vol. i, p. 647.
42. United States Dispensatory, 16th Edition, 1888.
43. Braithwaite's Retrospect, xxv, p. 161.
44. Coleman and Buxton on Paratyphoid Infections, American Journal of the Medical Sciences, June, 1902.

Heart Suture Again.—In choosing the subject of his oration before the annual meeting of the American Medical Association Harry M. Sherman made a happy choice in selecting "The Suture of Heart Wounds." This is a subject which has lately been brought prominently before us by three cases operated on by American surgeons, and we have editorially invited the attention of our readers to this interesting advance in surgery. . . . We believe with the orator that the surgery of the heart will be still more perfected and its field greatly extended.—*Philadelphia Medical Journal.*

ULCER OF THE BLADDER.

LOUIS E. SCHMIDT, M.Sc., M.D.
Associate Professor of Genito-Urinary Diseases, Chicago Policlinic; Attending Genito-Urinary Surgeon and Dermatologist, Alexian Brothers' Hospital.
CHICAGO.

Under the general title of "Ulcer of the Bladder," it will be best to avoid complicating considerations by stating definitely what is intended to be understood. I mean to speak only of ulcers in the usual pathologic sense; that is to say, the loss of substance which does not show any intention of healing, which produces abnormal secretion and whose base is covered with regular granulations; and furthermore, a loss of tissue not due to any cause which comes from the exterior of the bladder or which destroys the continuity of the bladder wall, as abscesses, foreign bodies, ligatures, etc.

PROGRESS IN KNOWLEDGE.

Ever since the more exact diagnosis of diseases of the interior of the bladder, including ulcerations, has been considered, constant advances have been made and we find that the interest of genito-urinary surgeons has also correspondingly increased. Still greater attention was given to this particular subject, as soon as it was no longer a matter of conjecture, that these ulcers were the cause of a series of distinct symptoms, the nature of which had not been clear up to this time. As clinical experience has shown, the diagnosis of ulcer of the bladder has become of greater significance, because we can treat them in a rational and successful manner.

THE VARIETIES OF ULCER.

It is possible to classify the ulcers occurring in the bladder in a general way as follows: gonorrheal, traumatic, ulcerations which occur in a non-gonorrheal cystitis, tubercular, ulcerations which follow necrosis of malignant tumors, solitary, perforating and syphilitic.

THE GONORRHEAL TYPE.

There can scarcely be a question of doubt that the most common ulcers are those that occur on a gonorrheal base. The course, as a rule, is somewhat as follows: A severe infiltration commences to form about a single or around numerous centers of infection characteristic of gonorrheal cystitis and in the course of time the summits of these areas of infiltrations become necrotic; this loss of tissue leads to the formation of ulcers. The individual points of necrosis may become larger and larger and numerous ulcers may be present or, again, they may become confluent and form a single ulcer. This has been, up to the present time, the more usual in my findings, probably because the cases do not present themselves in the initial stage. From their etiology the peculiar configuration of these ulcerations and the appearance of the ulcers themselves can easily be accounted for. These ulcers are apparently sunken in on a plateau; this is entirely due to the summit of an infiltrated area becoming necrotic, while the remaining infiltration is still above the normal level of the surrounding mucosa. The surface of such an ulceration is covered with a membrane which is almost white in color, slightly reflecting in character and which is adherent to the base. If this covering is forcibly removed, an uneven surface composed of easily-bleeding granulations is seen. These ulcers have a tendency to occur in the same bladder in different stages, if not, at least in the immediate neighborhood other rounded infiltrations are to be seen in different periods of development. If the apices are not necrosed, they may be at the point of becoming so. The condition of the remaining mucosa

is variable. Either the gonorrheal infected areas, on account of the long period of time of their existence, have already become confluent so as to cause a diffuse affection or a secondary infection has been added causing an affection of all the remaining parts, or in other words, a general cystitis. In all probability in the larger number of cases the mucosa between the areas of infiltration and ulceration has never been affected; if so, it has been treated with the usual therapeutic agents and these parts brought to their normal condition so that the ulcers and the prominences stand out boldly from the remaining healthy mucosa. The seat of these ulcers is naturally in the trigonum, as it is here that the gonorrheal cystitis usually exists. A place of predilection of these ulcers is in the immediate neighborhood of the internal urethral orifice.

NON-GONORRHEAL CYSTITIS TYPE.

A somewhat rare ulcerating condition of the mucosa is occasionally found when a non-gonorrheal cystitis has been neglected. Such inflammations, especially caused by the bacterium coli communis, present every now and then almost complete ulceration of the entire mucosa. In the differentiation from gonorrheal cystitis we find the ulcers in great number and closer together and the entire mucosa involved in the inflammation. In very pronounced cases of this kind the entire mucosa is covered with irregularly-shaped ulcerations. The parts between these ulcers consist of rough, dark-red edematous mucosa. Further, to differentiate from gonorrheal ulceration it is seen that these ulcers have no place of predilection, but appear anywhere on the inner surface of the bladder or are found distributed throughout the mucosa, so that the fundus and the vertex of the bladder are equally affected in the ulcerating process. The distinct infiltration which is seen in the gonorrheal ulcers in the real early stage is absent, although in the chronic forms, where we have a general cystitis, the bladder wall is, of course, more or less thickened. In these cases, moreover, an ammoniacal urine is often found to be present. Besides, the urine shows the characteristic appearance of bacteriuria. Since so many different germs are the cause of a cystitis, and since the character of the urine varies so greatly, it can be readily understood that ulcerations have a varying appearance. Consequently no exact description can be given for all of the ulcers included under this particular heading.

ULCERS FROM TRAUMATISM.

Traumatic ulcer arises when a foreign body, for instance, an uneven stone, causes repeated and long-continued traumatism to one point of the mucosa. One finds, then, that the otherwise normal-appearing mucous membrane shows at these points depressed ulcerations, that is, they have a sunken-in appearance, these ulcerations corresponding to the point of contact with the causative foreign body. As a rule, in those cases which have existed for some time we find the edges slightly and evenly infiltrated and often more or less ragged, especially if the foreign body is a rough stone.

As regards true ulcerations caused by catheters and other instruments, they are comparatively rare. Although traumatism in the presence of an inflammation may cause an ulcer, yet it takes on the appearance of an ulcer which occurs in the course of an ordinary cystitis. A stone may also be the cause of a traumatism in a bladder where cystitis exists. The previous description, however, refers especially to a bladder that is otherwise healthy.

THE TUBERCULAR FORM.

Tubercular ulcers characterize themselves in the fact that they are always small and that in their immediate the mucosa, which have not yet necrosed, are always neighborhood small grayish-white nodules, made up of present. Inflammatory reaction about these nodules is completely absent. These tubercular ulcerations occur most often in the trigonum, and are especially common in the immediate neighborhood of the urethral openings. This is readily explained in that tuberculosis of the bladder is often secondary to tuberculosis of the kidney. Again, a definite number of cases, when the process is ascending, have been noted where the ulcerations are in the immediate neighborhood of the internal urethral opening. In primary tuberculosis of the bladder the tubercular process is most often situated within the trigonum, but not necessarily. There are cases in the female where we find the tuberous form of tuberculosis. As a rule, it is in the form of a prominence about the urethral opening which carries on the summit a torpid ulcer. In the tissue of these prominences tubercular nodules have been demonstrated. Such cases have been successfully operated on by excision and complete suture. A good picture of such a case was published by Blanck in last year's *Urologie*.

Gonorrheal, non-gonorrheal and tubercular cystitis with ulcerations can exist at one and the same time. Whenever they do, the cystoscopic picture is variable, and it is impossible to give an exact description. However, the ulcers may have the characteristics of one or all of the mentioned varieties.

FROM NECROSIS OF NEOPLASMS.

Ulcerations which result from the superficial necrosis of malignant tumors are characterized as follows: they naturally occur on the most prominent surface of the tumor which projects into the bladder. The edges are irregular and undermined, and in the immediate neighborhood of the ulcerations hemorrhages into the surrounding structure are noticeable. The surface of these ulcers is always caseous and warty and usually bears incrustations from the urinary salts.

THE SOLITARY ULCER.

A form of ulceration, the cause of which is yet entirely unknown, is the so-called solitary ulcer. Occasionally one meets, and most often in females in an otherwise perfectly normal appearing bladder a single ulcer, varying in size, which has the appearance of being stamped out from the mucosa. The edges of this type of ulceration are not infiltrated. The surface of the ulcer is usually bright red and granulating. The appearance of this particular type scarcely changes itself even if the ulcer is of long standing. Fütterer has pointed out and set up the hypothesis that this type of ulceration may be caused by certain forms of anemia, comparing them to the solitary round ulcer of the stomach.

THE PERFORATING ULCER.

Perforating ulcers, as a rule, are detected only after perforation has occurred. Here an abscess around the bladder in the pelvic cellular tissue forms, with eventual urinary infiltration. In some cases the perforation takes place into the peritoneal cavity and peritonitis follows. In aid of the diagnosis it may be said that when we encounter a severe hemorrhage from the bladder and shortly afterwards peritoneal symptoms arise we must think of this variety of ulcer. The cause is regarded by pathologists as an embolism into an arteriole of the bladder, causing circumscript gangrene. Most

cases on record have been diagnosed on the postmortem table.

THE SYPHILITIC VARIETY DOUBTFUL.

The occurrence of syphilitic ulceration is very problematical. The most experienced syphilologists and pathologists are unacquainted with this appearance of syphilitic granulomata. As yet they have not been positively proven to exist.

ULCUS CYSTOSCOPICUM.

A peculiar type of ulceration of the bladder, if I may venture to use the expression, is the ulcus cystoscopicum. It is certainly not uncommon that during cystoscopy the lamp burns the mucosa by coming in contact with it. In the course of time the eschar is thrown off by the granulating tissue beneath it. These granulating surfaces are then mistaken by the inexperienced cystoscopists who caused them. To differentiate these burns from true ulcerations it is seen that there is no inflammatory reaction about them, or if such does exist it is an exceedingly small zone, and that they heal without any therapeutic measures in the course of 14 to 21 days. Besides, their situation is characteristic. They usually occur in the fundus or vertex of the bladder and the ulceration takes on the shape of the instrument which caused it.

Gonorrheal ulcers heal in such a way, with the outlined treatment, that we find a smooth surface, which is a shade lighter than the surrounding mucosa with no blood vessels to be seen on it.

General ulcerations often leave band-like scars or a network of scars.

SYMPTOMATOLOGY AND DIAGNOSIS.

As regards the symptoms of these ulcers, it is necessary to note the following. The tubercular ulcers are characterized in the fact that they show very marked subjective symptoms with relatively slight objective symptoms. They are usually the cause of very severe bladder pains which become excessive and permanent whenever a tubercular infiltration of the bladder mucosa commences. In conjunction with this it is desirable to mention that even with the occurrence of multiple tubercular ulcerations the urine may remain perfectly clear. Also the advent and presence of the bacillus tuberculosis in the urine does not necessarily bear any relation to the extent of the local tubercular bladder processes. Very numerous extensive ulcerations can exist and yet the finding of the bacillus tuberculosis in the sediment of the urine may be very difficult or even in some cases impossible. Again, it is to be observed that we find occasional cases of tubercular ulceration of the bladder that in the interval between acute attacks show little or no subjective symptoms.

This is especially true in female patients, yet in the male individuals we notice, as a rule, an early combination of the bladder tuberculosis with that of the genitalia, so that the symptoms arising from the different localized areas of the infection appear to intermingle with each other. In these cases the bladder symptoms may occasionally apparently diminish in importance.

Mixed infection, or secondary infection, on a tubercular base frequently causes changes in the symptomatology. Careful histories are helpful in these cases. One should ever bear in mind that in the large majority of instances of bladder tuberculosis it is descending or ascending in origin.

In cases of gonorrheal ulcers we find marked parallelism between the objective and subjective symptoms. As soon as an ulcer establishes itself, or as soon as an area of necrosis separates itself from the underlying tissue, severe pains set in and at the same time turbidity of urine occurs. On the other hand, during the stationary period of the ulcer, the urine may be temporarily perfectly clear and the symptoms may not rise above those of ordinary cystitis. Even if the subjective symptoms can never be recognized as characteristic of an ulcer, yet it is possible from certain series of symptoms and their definite course and sequences to formulate the suspicion of the existence of an ulcer. Whenever in the course of a gonorrheal cystitis considerable blood is found intimately mixed with the urine, again when the urine is intermittently perfectly clear and when again without apparent cause the urine becomes turbid, when conglomerated masses of detritus appear in the urine in conjunction with more or less severe bladder symptoms the almost absolute diagnosis of ulcer may be consistently considered. It is best to mention that in cases occurring in the female sex the hemorrhage may occasionally be of great severity. Again, it may be positively asserted that under favorable conditions the infiltrations due to the ulcers can sometimes be palpated, in the female sex, on account of the anatomic location of the bladder.

It is difficult to differentiate between traumatic ulcers and those caused by foreign bodies in the bladder because of the similarity of the symptoms. But it is allowable to surmise—whenever the presence of a foreign body in the bladder is known—that when severe pains arise in the bladder, appearing to be centered at one and the same place, an ulcer of the bladder wall has formed under the direct influence of the foreign body. Necessarily blood and detritus may be present in the urine.

Ulceration in cases of non-gonorrheal cystitis is characterized by the fact that masses of blood coagula and detritus are constantly found in the urine. The entire bladder becomes painful, so that not only contact by examination from within or without is distressingly painful, but the bladder becomes the seat of permanent pains. As the bladder surface suffers from the progressive infiltration of its walls so that the elasticity and expansibility constantly become less, and therefore the capacity of the bladder accordingly diminishes so that in the course of time only small quantities of fluid can be retained. This leads to the formation of the so-called cystitis dolorosa. Even in the male the sensitiveness of the bladder by palpation through the abdominal wall is discernible, while examination in women produces much more pain. With bimanual examination we often find the bladder, in those cases that permit of examination, changed into a thickened, hardened, abnormal, painful tumor.

As a rule, the solitary ulcer gives absolutely no symptoms, but if any are produced they are usually mild. For this reason this variety of ulcer is found unexpectedly and rarely.

Perforating ulcers are seldom met. In cases where there are emboli to numerous other parts of the body and where suddenly in the course of such a case acute bladder symptoms arise, this condition must be remembered. No positive cystoscopic picture has been recorded.

In order to make a correct diagnosis of ulcers of the bladder, it is necessary—since we have no absolute symptomatology—to inspect the interior of the bladder. It is easily understood that the only method of making a rational diagnosis is by the aid of cystoscopy or endoscopy. If we take into consideration that advanced cases of gonorrheal cystitis or of infiltration of the blad-

der wall due to tubercular cystitis do not permit sufficient expansion of the bladder to allow the use of the Nitze cystoscope, we must use in these particular cases the endoscope or the American cystoscope, in order to make a diagnosis. The appearances of these different varieties of ulcers have already been described. I may add that the exact appearance, whether viewed either directly or indirectly, whether the bladder is filled with fluid or air, does not change them to any appreciable extent to the initiated eye. As regards the advisability of making a suprapubic or perineal incision for diagnosis only, it must naturally become an obsolete method in a large number of cases, as long as we have the means of avoiding any such operative step.

TREATMENT BY IRRIGATION INEFFECTIVE.

When we consider the therapy of ulcers of the bladder, it must be regarded as the cardinal principle, wherever the cure of existing ulcers is necessary, that general measures, under which I include bladder irrigations and instillations, are not sufficient. A successful result can only be obtained with direct local applications. In cases of gonorrheal ulcers it can be readily seen that irrigations with strong solution of any kind of medicament or the instillations of concentrated caustic solutions must remain valueless. The coating of this type of ulcer is leathery in character, hence any solution that may be applied in any manner will not reach the granulations.

CURETTAGE AND CAUTERIZATION.

In order to cure ulcers of the bladder it is absolutely necessary to curette, to remove the coating and the granulations on the base. It is highly desirable at the same time to apply the thermocautery over the curetted surface, partly to stop any hemorrhage, which is usually of a light character, and also to cover the curetted field with protective eschar. This operation is performed most judiciously and most readily with the aid of an operation cystoscope. It must be understood that this method of treatment should be used in all these cases. In the course of generalized ulceration of the bladder of non-gonorrheal cystitis, this method of treatment, as a rule, is worthless or only temporary. In these cases there is but one operative step which results in an absolutely successful termination. This is to open the bladder and curette the entire affected mucosa. Two points are thus gained. First, all the diseased tissue is removed by the curette, and second, the bladder is put to rest by the temporary drainage. The infiltrated walls thus become less swollen and lose their edematous condition, without being irritated from distention. If the condition which is called cystitis dolorosa has set in, the parts must be thoroughly curetted and the bladder completely tamponed. This is of vital importance. The tamponade must be kept up until the walls of the bladder have lost their sensitiveness. If the tamponage is stopped previously to this, the affected areas will come in contact with each other and the entire process be repeated. In cases of solitary tubercular ulcerations and infiltrations (nodules) it is possible to get perfect results with the use of the operation cystoscope. These ulcerations and infiltrations can be completely and thoroughly curetted and then cauterized. However, if there is more or less general involvement of the bladder, other major operative steps besides the opening of the bladder are necessary. If the infection of the bladder arises from a tubercular affected kidney it naturally follows that previous to any endovesical procedure it is necessary to remove the source of infection by a preliminary operation on the kidney or ureters or both.

CAUTERIZATION AS A PALLIATIVE.

Where necrosis of the superficial parts of malignant tumors has occurred, and where it is no longer feasible to perform an extirpation of the same, cauterization is indicated to lessen the pain and improve the ammoniacal condition of the urine. These ulcerations should be thoroughly cauterized, either with the aid of an operation cystoscope or whenever necessary after the bladder has been opened. As long as the eschar remains fixed, the patient will have no pain, no hemorrhages and no ammoniacal decomposition of the urine. These intravesical operative procedures can, if necessary, be frequently repeated.

OTHER REMARKS ON TREATMENT.

Traumatic ulcerations disappear, if the bladder is otherwise healthy, as soon as the cause is removed. Should, however, this not be sufficient, slight cauterization will quicken the healing.

The therapy of solitary ulcerations has not been put on a sufficiently clear clinical basis. If we regard Fütterer's view, in addition to the local treatment of curettage and cauterization, it would be desirable to make efforts to increase the amount of hemoglobin by general treatment.

Perforating ulcers must be treated by resection of the bladder. Pericystitis or abscess is usually present in these cases and consequently free incision and drainage are imperative.

CLINICAL CASES.

In order to illustrate, I wish to cite a few cases of the different types. A few will be sufficient to answer the purpose.

CASE 1.—J. K., aged 28, single, policeman, presented himself Aug. 31, 1898. Six years before he had a first urethritis and was treated for six months at this time with internal medication. For the past three months he was treated with irrigations and later with sounds. A slight discharge each morning was the cause for examination. No gonococci, but a few epithelial cells and pus were found. The three-glass method revealed: 1, threads, few epithelial cells and pus; 2, clear, no albumin, no sugar; 3, turbid, pus, lecithin. The rectal examination revealed lobes slightly irregular in outline, nodulated, but slightly painful to palpation. A 25 Charriere diagnostic sound showed a narrowing just back of the external urethral orifice and a roughening in the membranous urethra.

The patient failed to return until March 16, 1901. At this time he stated that he had had no fresh attack since his first visit. However, he has been treated almost continuously since. One year ago he apparently had a right-sided epididymitis. During all this time he has complained of pain and of an itching sensation in the rectum, and frequent pains on inner surface of thighs. Sometimes these would become unbearable. The three-glass method examination shows the same appearance as previously. The rectal examination shows the prostate gland to be larger, apparently edematous and exceedingly tender. Urethroscopic examination shows, near the right urethral orifice and just within the trigonum, an ulcer, irregular in outline, but about the size of a split Lima bean, the whole on an infiltrated base, edges ragged, the whole covered with a grayish membrane. The rest of the bladder is negative except for a slight trigonum cystitis. Ulcer curetted and given electrocauterization with aid of Kolischer cystoscope. The prostatitis treated antiphlogistically for some months. Feb. 8, 1902, the bladder is in an absolutely healthy condition.

The next two cases belong to the same type and consequently I will make the histories very short.

CASE 2.—Feb. 21, 1901. A. D., aged 40, married, laborer. At 16, he had a first and only urethritis. He believes he never was cured. Twelve years ago he had right-sided epididymitis.

At present he has severe pains in lumbar region, so bad that he is often obliged to stop work. At time of defecation there passes from external urethral orifice a thick, sticky discharge. He has no urinary symptoms at present. The three-glass method shows: 1, short and heavy threads; 2, turbid, pus, no albumin; 3, turbid, specks, pus, and lecithin. There are irregular and nodulated lobes of the prostate. A 25 Charriere diagnostic sound passes with difficulty through stricture of membranous urethra, 25 c.c. retention of urine. February 26, an ulcer of the bladder was demonstrated cystoscopically. Operation at Alexian Brothers' Hospital March, 1901. November 10, no retention, urine almost clear and only slight pains; ulcer seen to be healed.

CASE 3.—Sept. 26, 1900. C. L., married, aged 42, urinates one to two times each night and ten or fifteen times each day, has no pain in urethra, but a burning pain in the rectum. The three-glass method shows: 1, threads and turbid, pus and few epithelial cells; 2, turbid; 3, turbid, pus. Irregular, nodulated and painful lobes. A 27 Charriere diagnostic sound negative. Thirty c.c. retention. Treated regularly until February 6, when there was demonstrated a slightly beginning trabeculated bladder with an ulcer on the base. Slight cystitis of entire bladder. Ulcer mostly on right side, size of fifty-cent piece, irregular in outline, edges elevated, base uneven and in places covered with a membrane. Operated on at Alexian Brothers' Hospital and left improved. In November, 1901, the writer demonstrated the absence of ulcer and showed the cicatrix.

CASE 4.—*Traumatic ulcer caused by phosphatic stone.* A. H., aged 41, saloonkeeper. July 28, 1901. Health has been good up to July, 1900. At this time he acquired his second gonorrhea. Practically all his symptoms arise from this time. Previously he can not remember any special pains or frequency of urination. This condition improved somewhat, but again became worse so that at time of admittance to the Alexian Brothers' Hospital he had severe pains above pubes, in perineal region, becoming much worse after the least walking or riding. Frequent urination during the day, occasionally during the night. In past year he has noticed blood in the urine several times. Stone searcher showed presence of a stone. Cystoscopic examination shows a single stone, size of a walnut. Distinctly phosphatic in character, sunken in and the mucosa about the stone very irregular and abraded. About the whole, the mucosa appears dark-red and velvety in character. Stone crushed and particles evacuated. Cystoscopic examination shows a distinct ulcer. On account of the cystitis, he received daily bladder irrigations, but after ten days the ulcer was still present. Edges curetted and slight cauterization over the whole affected area, then mild treatment, and a complete recovery of ulcer noted cystoscopically four weeks later.

CASE 5.—*Tubercular ulcerations.* F. X., aged 35, single, May 28, 1901. About 20 months ago, for the first time, had a "stitching-like" pain at time of urination. Shortly afterward, frequent urination, both day and night, set in. All these pains and frequency of urination have apparently become worse. Just at present he has severe pains in glans penis at time of passing urine; even when not urinating there is apparently a slight dull ache, with more or less indefinite pains over pubes, in perineal region and adjoining parts of thighs. Patient states he has never had gonorrhea. Syphilis 8 years ago. Father and mother have both died of pulmonary tuberculosis. At present his appetite is very poor, bowels irregular and patient is run down. Has had of late irregular chills and fevers. External examination negative except nodulated epididymi. Rectal examination shows irregular, nodulated lobes, both slightly painful. Slight retention of urine, cystoscopically showed a typical beginning tubercular bladder. Instituted different forms of treatment, but finally, on account of no progress, instituted cauterization with good results. Patient's urine became clear and no tubercular germs could be found. Desire and frequency of urination greatly lessened and patient commenced to increase in weight. In past 6 months he has gained 40 pounds in weight. Cystoscopic examination is negative, in November, 1901.

MUSCULAR INSUFFICIENCY OF THE MITRAL VALVE.

CHARLES SPENCER WILLIAMSON, B.S., M.D.
Adjunct Professor of Medicine, College of Physicians and Surgeons, University of Illinois.
CHICAGO.

(Concluded from p. 63.)

CLINICAL HISTORY OF THE ACUTE FORM.

The muscular mitral insufficiencies may present themselves in two forms: first, acute; second, chronic. The acute cases present themselves during the course of those diseases which affect the myocardium. These are diphtheria, scarlet fever, typhoid, acute articular rheumatism, and in general, the acute infections, the ones mentioned predominating. As I have seen them, the majority of the cases were in polyarthritis. During the course of the disease a systolic murmur, usually soft and blowing, will be heard in the region of the apex. At first it is often inconstant, but as the days go by it comes to be constant, always with its maximum of intensity at the apex, and seldom of great intensity. The heart presents the physical signs of a slight or moderate dilatation without hypertrophy. I have never seen extreme dilatation, never anything like enough to cause a mechanical and truly relative incompetency. The symptoms of cardiac insufficiency may develop, although they are seldom of high grade. These differ in no way, of course, from those which would develop in the wake of an organic mitral lesion when the compensation is ruptured. It is not in the least necessary that I should sketch these symptoms further—they are too well known to need repetition here. Suffice it to say again, that the cardiac insufficiency seldom attains a high grade. I have never seen a high degree of general anasarca in these cases. As a rule, these symptoms appear rather late in the course of the various diseases named. The symptoms usually last two to three weeks and gradually disappear. The symptoms due to the primary disease and those due to the myocarditis as such are difficult to separate.

My impression is that, so far as symptoms other than those of cardiac insufficiency are concerned, there are none in any way characteristic; indeed, I may say there are practically no other symptoms. I have once or twice considered a temperature of 99.5 or 100, which continued in a case of rheumatism for some time after the joint symptoms had subsided, as due to an acute myocarditis. I am free to confess, though, that it usually disappeared long before the physical signs of the mitral insufficiency did, so that it is very doubtful if there be any connection between the two. To recur to the heart, as said above, the dilatation is usually very moderate, the absolute dulness increasing about an inch outwards, on the average. The apex beat is correspondingly displaced, as a rule still in the fifth interspace. It is broader than normal, perhaps three fingers' breadth in extent, rather diffuse and feebler than normal. I have never obtained a thrill in any location. The auscultatory findings are of the simplest. As a rule, in the second or third week of a rheumatism, a soft systolic murmur appears at the apex and in a few days attains its maximum loudness, which is never very intense. It remains, as a rule, rather soft and blowing. My own experience has been that it is limited quite closely to the apex, being heard fairly well in the fourth interspace. I have never been able to hear it in the back, perhaps because of its feeble intensity and soft character. Very loud or musical murmurs I have

not observed. The first sound is always to be heard with the murmur, sometimes a little muffled. I have not heard it reduplicated. The second sound at the base has its normal character over the aorta, is distinctly accentuated, sometimes markedly so over the pulmonary area. Careful palpation will sometimes detect the increased shock of closure of the pulmonary valve as compared with the aortic valve. With these, the physical findings are exhausted.

DIAGNOSIS.

The diagnosis of the acute form had best be considered at this point. Inasmuch as a myocarditis is especially common with those diseases which are fruitful in the production of endocarditis, the most difficult point is to differentiate an acute muscular from an acute endocarditic mitral insufficiency. At the height of the primary disease, one is as apt to develop as the other. A mitral insufficiency is diagnosed from the well-known signs of a dilatation of the left ventricle, systolic murmur limited to, or loudest at the apex and a definitely accentuated second pulmonary sound. I believe it to be impossible to distinguish between a muscular and an endocarditic insufficiency except by the progress of the disease. In the muscular form, the physical signs vary considerably. The murmur varies greatly in intensity, at times becoming very soft; the accentuation of the second pulmonary sound has seemed to me to vary much in intensity, but always louder than normal. The auscultatory phenomena of endocarditis may vary much also, so that these points are utterly insufficient to establish the differentiation. This can only be done with certainty or approximate certainty, by the further course. The endocarditic form remains constant, and hypertrophy, as evidenced by the increased force of the apex beat, makes its appearance. Experience has shown that it takes about six or seven weeks for an hypertrophy to develop. A definite hypertrophy setting in, places the seal on the insufficiency as being of an endocarditic nature. The muscular form, after lasting two, three, or four weeks, disappears, leaving no hypertrophy or dilatation. The auscultatory signs grow weaker, the dilatation less, day by day, and then disappear permanently. One instructive case has come under my observation in which, in the course of a rheumatism of rather severe type, a mitral insufficiency developed with marked dilatation and symptoms of cardiac insufficiency. The symptoms and physical signs all disappeared in about two weeks' time. Some two or three weeks later a systolic murmur was again heard at the apex, the signs of mitral insufficiency again made their appearance, in due time hypertrophy set in and showed the latter to be endocarditic. My interpretation of this case is that the first was unquestionably muscular in nature; there had been a myocarditis which healed and an endocarditis which did not. Either the myocarditis developed first, or more likely the endocarditis was there from the beginning, and attained a degree such as to cause a murmur only after five or six weeks.

To differentiate a muscular insufficiency from an accidental murmur (so-called hemic) is easier. The presence of a definite dilatation of the left ventricle, systolic murmur, always loudest at the apex and an accentuated second pulmonary sound rule out anemic murmur. I hold with Leube—the accidental anemic or hemic murmurs are in the overwhelming majority of cases loudest at the pulmonary area. This is a further point. I believe a certain number of so-called hemic murmurs at the apex to have been cases of muscular insufficiency, though I would not be interpreted as meaning that all hemic apical murmurs have this origin.

SYMPTOMS IN CHRONIC CASES.

The chronic cases of mitral muscular insufficiency present themselves under very different conditions. The cases develop in old people—usually past fifty years, who have chronic interstitial myocarditis—better termed myodegeneration. To sketch the onset would be to sketch the onset of this affection, which, as is well known, develops very insidiously and often absolutely without symptoms. It is not at all my purpose to attempt to give an outline of the clinical history of myodegeneration. Suffice it to say that the greater number of cases of myocarditis run their course without presenting the signs of a muscular mitral regurgitation. Statistics are wanting and impressions proverbially unreliable, yet in the lack of better information I would say that my impression is that perhaps 15 or 20 per cent. of cases of myodegeneration develop a muscular insufficiency.

The patients, as I have seen them, present a remarkably uniform picture, i. e., that of a cardiac insufficiency of a low grade. Dyspnea and swelling of the ankles are the first of the classic symptoms usually complained of. Neither of these is, as a rule, of a high grade and often may be barely noticeable. Pain in the epigastrium, with pressure tenderness over the left hepatic lobe, is rare in this form of cardiac insufficiency, as compared with its frequent occurrence in a mitral regurgitation with ruptured compensation in young subjects. Possibly the fact that there is often a senile atrophy of the liver in these cases, so that the venous turgescence is less perceptible, may be an explanation. When the hepatic tenderness is present, it is always over the left lobe; I have never been able to elicit tenderness over the right lobe, even on deep pressure.

The physical examination discloses, as a rule, a slight cyanosis of nose, lips and ear-tips, sometimes of fingertips. An arcus senilis is often found in these patients. The carotids and the arteries of the extremities present in many, perhaps most, cases, the signs of an arteriosclerosis. It would be a grave error, however, to consider that it must be present in every case, or even that these changes must be present where there are well-marked sclerotic changes in the coronary arteries. It happens in many cases that the distribution of an arteriosclerosis is a very unequal one—the brain and heart may be spared and the peripheral arteries rigid, or the converse may be true. While no positive criterion, the finding of a peripheral arteriosclerosis may be used as an argument in favor of the existence of the same changes in the coronaries.

The heart shows the physical signs of a moderate dilatation of both ventricles, more so of the left. This is rarely excessive, and apex beats reaching much beyond the mammillary line I have seen but seldom. The apex beat is wider than normal; perhaps three or even three and one-half fingers' breadth, and usually not markedly heaving, corresponding to simple dilatation without much hypertrophy. The reason for this has been already discussed. Exceptionally, there may be considerable hypertrophy. In the rare cases, in which I have seen this, the history made it clear that the probable underlying factors were hard work and alcoholism, causing a simple hypertrophy, and then, as often happens, a chronic myodegeneration sets in later, leading to muscular mitral insufficiency. What I wish to emphasize is that in a genuine, pure mitral muscular insufficiency any considerable hypertrophy does

not occur. The same lesion of the myocardium which produces incompetency, prevents the myocardium from becoming hypertrophic. In the occasional cases of hypertrophy due to arteriosclerosis it is probable that both hypertrophy and arteriosclerosis precede the muscular insufficiency, the hypertrophy being in no sense a result of the muscular mitral incompetency.

A systolic murmur, always limited to or loudest at the apex, is the principal auscultatory finding. It occurs along with a fairly normal first tone. The second tone at the pulmonary area is distinctly accentuated. I have never felt a thrill in these cases. The pulse offers nothing pathognomonic. It may be fast, more seldom slow, but I have seen a few cases of a very markedly slow pulse, 45 to 50. The most characteristic feature in my judgment is the irregularity, which is frequent and may be very pronounced. This depends, as is well known, on the myodegeneration and occurs in this disease whether or not it has led to a muscular mitral incompetency. A bi-geminal pulse is frequent.

One quite frequently has opportunity to examine these cases when cardiac insufficiency has not set in. In such cases nothing directs one's attention especially to the heart. Only a few days since I discovered a case in an old lady of eighty-three, whom I had under treatment for enteritis. In her case the insufficiency is transitory, disappearing after a few days in bed. In this case symptoms of cardiac insufficiency have never been present.

I need not sketch here all the symptoms which may occasionally present themselves. They are in no way caused by the muscular incompetency *per se,* but are due solely to the underlying myodegeneration. I refer especially to attacks of angina, which are especially prone to occur where there is marked sclerosis at the origin of the coronary arteries. Such patients are often the victims of a sudden death (Herzschlag). With this sketch, which, brief as it is, includes the entire symptomatology as far as it is due to the insufficiency *per se,* we have learned the points essential to the recognition of the disease.

DIAGNOSIS OF CHRONIC CASES.

In this discussion I wish to avoid long and complex analyses of symptoms. Indeed, these would be of little value in any case in the disease in question. The first and most important thing is to establish the existence of a mitral insufficiency, of what sort soever. One should hold fast to the following: 1, pure systolic murmur, of whatever kind or intensity it may be, limited to or loudest at the apex; 2, well-marked accentuation of the second sound over the pulmonary area; 3, a dilatation of the left ventricle. Rare cases of congenital heart lesion excepted (and these could hardly come into consideration), these findings mean mitral insufficiency. A hypertrophy of the left ventricle is not necessarily present, hence the apex beat need not be heaving. Here it must be remembered that in fresh cases of endocarditic insufficiency it requires at least six or seven weeks for hypertrophy to become marked enough to make itself evident by the increased force of the apex beat. If, on the contrary, hypertrophy be present, it does not in the least exclude a muscular insufficiency, as the muscular insufficiency may occur in a heart hypertrophic as a result of hard work, alcoholism, etc.

The differentiation from an endocarditic mitral incompetency is the most difficult, though often a simple matter. In the endocarditic form the patient is almost always young, or the history shows a heart trouble of years' duration. In the muscular form the patient is usually over 40, often 50 or 60. In the former we find a history of one of the infections which lead to endocarditis, such as polyarthritis or scarlet fever. In the latter, no such affections have existed and the patient has, as a rule, never shown any cardiac symptoms till middle age. In the muscular form there is often an arteriosclerosis and the pulse is frequently irregular. This is a valuable symptom, as it does not often occur in a pure compensated endocarditic insufficiency, when not accompanied by stenosis. Attacks of angina, if present, speak for the muscular form. One point should be carefully watched, namely, the phase of the murmur. If it be in the least degree diastolic, or presystolic, or diastolic with presystolic increase, a stenosis is present and this is an invariable proof that the lesion is endocarditic in its nature. A thrill, whether presystolic or diastolic, has the same or even greater diagnostic value.

The differentiation from a hemic murmur should present no difficulty, as a rule. Hemic murmurs are almost always loudest over the pulmonary area; there is no dilatation (ordinarily) of the left ventricle, and no accentuated second pulmonary sound. Practically, this difficulty is more theoretical than real.

The differentiation of the cause of the muscular incompetency is sometimes very difficult. In the great majority, the vast majority, in my experience, it is associated with myodegeneration. A fatty heart might give rise to a muscular insufficiency. I have seen one case where I believed this to be the case. The diagnosis was based on a very great lipomatosis universalis and the absence of arteriosclerosis and irregular pulse, together with the signs of mitral insufficiency and no history of rheumatism, etc. In such a case the diagnosis is only probable at best. I have never seen a case due to syphilis of the heart, and this because of its great rarity hardly comes into consideration. I know of no criteria by which it could be diagnosticated.

To recapitulate briefly, the diagnosis of the chronic form of mitral muscular insufficiency resolves itself into, 1, diagnosis of a pure mitral insufficiency, without respect to variety; 2, in a patient over forty, with evidences of arteriosclerosis, irregular pulse, the symptoms not dating back many years, and in the absence of a history of rheumatism, etc., this is of a muscular nature, providing only the dilatation be not so great as to make a relative incompetency possible. A relative insufficiency may only be logically diagnosticated when the dilatation is very great, and when the points indicative of myocardial disease are absent.

Krehl considers the differentiation between muscular and endocarditic insufficiency impossible, when the murmur is constantly present in the former. To quote his own words:

"The differentiation between a muscular and an endocarditic mitral insufficiency becomes impossible if a systolic murmur is always present, and still more so if the second pulmonary tone is accentuated. I have seen numerous cases in which this condition of affairs is always to be observed and which lasts till death: under these circumstances one can come at best only to the diagnosis —mitral insufficiency with myocarditis. Very much oftener, however, the murmur is only temporarily present in pure myocarditis, sometimes present and then again wanting, and it is especially apt to disappear when the heart action improves. I do not say that this is absolutely characteristic. In endocarditis as well, the mitral insufficiency is certainly in large degree dependent

upon the imperfect action of the muscles at the base; but in the case of the muscular insufficiencies, the variation in the murmur is certainly more frequent and more striking."

Krehl is unquestionably correct if he means by diagnosis an absolutely certain diagnosis. In the great majority of cases, even when the murmur is constant, the points given above will enable one to make the differentiation with reasonable certainty. Inasmuch as the murmur is constant in only a small number of cases of muscular insufficiency, the difficulty does not often arise.

Finally, as to the differentiation of a muscular from a true secondary relative mitral insufficiency. The anatomic and physiologic data show plainly that it must require an enormous dilatation of the left ventricle to become incompetent in the old sense of relative insufficiency—that is, for the ring to become so large that the mitral flap could not close it. Just in these cases, i. e., arteriosclerosis, myocarditis, etc., one does not, as a rule, find excessive dilatation—indeed, in almost all cases, the dilatation is very moderate, and a relative insufficiency under these conditions is, in the light of the anatomic and physiologic data given, inconceivable. A relative incompetency may only then be assumed, when the dilatation of the left ventricle is very great, and this is, as said above, rare under the given conditions. I wish to say that it is my belief that the great majority of so-called relative insufficiencies in chronic myodegeneration are really muscular in their nature. I believe, further, that a certain number of so-called accidental or hemic murmurs, occurring at the apex only, are really muscular insufficiencies. Two such cases I have seen. I would not be considered as denying absolutely the existence of a true relative insufficiency of the mitral, as may happen occasionally in the great dilatation of an aortic regurgitation, yet even here the mechanism is different from that of a simple dilated mitral ring. The papillary muscles are probably the real cause of the incompetency, as Krehl has very clearly shown.

It is not my purpose to go into the subject of the muscular insufficiencies of the aorta, although it is certain that such exist. I have seen one such case where the aortic insufficiency was clinically beyond question, the valve proving normal on autopsy. Krehl speaks of such cases as well. Rosenbach says: "Let us ever keep in mind the cases in which the aortic arch is considerably dilated and calcified, and the valve segments are rigid, without either *intra vitam* or at autopsy any signs of insufficiency being present; also the cases where the water test on autopsy shows the valve to be insufficient, and yet in life the clinical observation could guarantee the absence of any insufficiency. All these facts compel us to assume the closure of the semilunar valves in the case of the aorta at least, which has, as compared with the pulmonary, very different and changeable pressures to withstand, to be not simply a problem in statics, a purely mechanical closure, but that here, too, an active mechanism comes into play. These clinical and experimental considerations, together with many years of observation on the cadaver, have led us to adopt the following conception of the closure-mechanism of the aortic valves, which we have often analyzed in lectures and demonstrations. The closure of the aortic orifice during the period of increased pressure in the aorta, which is brought about by the contraction of the artery, is caused not only by the valve flaps, but especially by the muscular part of the left ventricle surrounding the aortic orifice. This sphincter-like muscular diaphragm serves as an abutment to the valve, and after the valves are brought into the lumen of the aorta, at the end of systole, without, of course, because of its great caliber at this time, being able to close the orifice—at this time the muscular diaphragm exerts its action and aids materially in the closure of the aortic orifice."

BIBLIOGRAPHY.

Romberg: Berliner klinische Wochenschrift, 1893, Nos. 12 and 13.
Romberg: Deutsches Archiv für klinische Medicin, 1894, No. 53, p. 144, seq.
V. Frey und Krehl: Du Bois Reymond's Archiv für Physiologie, 1890.
Hesse: Archiv für Anatomie, 1880.
O. Rosenbach: Berliner klin. Wochenschrift, 1888, No. 37; No. 38, p. 764.
O. Rosenbach: Berliner klin. Wochenschrift, 1889, No. 2.
O. Rosenbach: Archiv f. Experim. Pathologie, Bd. ix, p. 26, seq.
Stokes: Krankheiten d. Herzens (transl.), 1855, p. 110, seq.
Von Leyden: Zeitschrift für klin. Medicin, 1886, Bd. 11, p. 105.
Rieder: Deutsches Archiv f. klin. Medicin, 1895, Bd. 55.
Krehl: Handbuch d. spec. Path. und Ther., Nothnagel, p. 321, seq.
Krehl: Archiv für Physiologie, 1889, s. 293.
Krehl: Abhandlungen der mathematisch-physikalischen Klasse d. kgl. säch. Ges. d. Wissenschaften, Bd. xvii, No. 5.

THE SO-CALLED "SPOTTED FEVER" OF THE ROCKY MOUNTAINS.

A PRELIMINARY REPORT TO THE MONTANA STATE BOARD OF HEALTH.

LOUIS B. WILSON, M.D.
MINNEAPOLIS.
First Assistant Bacteriologist, Minnesota State Board of Health; Senior Demonstrator in Pathology, Minnesota State University.
AND
WM. M. CHOWNING, M.D.
MINNEAPOLIS.
Junior Demonstrator in Pathology, Minnesota State University.

INTRODUCTORY.

The persistence over a limited portion of Montana of a disease locally known as "spotted fever" led the Montana State Board of Health to undertake a special investigation as to its etiology and pathology. In May, 1902, Dr. A. F. Longeway, secretary of the Montana State Board of Health, consulted the secretary of the Minnesota State Board of Health relative to said investigation. The latter expressed a willingness to aid the Montana authorities in every way possible.

Arrangements were made for Dr. Wilson to go at once to Montana and begin observations for the Montana State Board of Health. At the same time it was planned that Dr. Chowning should follow Dr. Wilson at the earliest possible date.

The disease had been recognized as a distinct clinical entity by local physicians for fifteen or twenty years, but the only article in a medical journal hitherto published concerning it is that by Dr. E. E. Maxey, in the Portland *Medical Sentinel,* for October, 1899. Two other papers, by Drs. R. Gwinn and G. T. McCullough, were read at the May, 1902, meeting of the Montana State Medical Association, and will be published shortly. These three deal very clearly with the history and clinical symptoms, but the pathology and etiology, we believe, have not hitherto been reported on.

LOCATION.

Dr. Maxey's paper describes cases in Idaho, mostly along the southern foothills of the Boise mountains. The cases in Montana are confined to the eastern foothills of the Bitter Root mountains (a range along the top of which runs the Montana-Idaho state line), namely, on the western side of the Bitter Root valley in an area from

four to ten miles wide and ninety miles long. No case has ever been known to originate in Montana outside of this territory except seven cases in an area about a half mile wide and two miles long in the narrow canon of Rock creek about 20 miles east of the Bitter Root valley.

The Bitter Root range of mountains is very rugged, the top being covered with snow until about July 1, and some peaks capped throughout the year. The range on the east side of the valley is less rugged, though the snow remains almost as long in spring as on the west side. On the foothills the snow melts from sunny exposures as early as February, the bulk of it disappearing in April and May. The climate of the valley is very mild, as is evidenced by the many orchards of apple, pear, cherry and plum trees. The altitude of the valley is about 3,500 feet above sea level.

The population of the valley is made up largely of fairly well-to-do ranchers, the majority of whom have come from Missouri, Georgia and the Carolinas. They are, as a rule, cleanly and healthy.

HISTORY.

In Idaho spotted fever has been known for about thirty years. So far as can be determined, the first case of "spotted fever," "black fever" or "blue disease" in the Bitter Root valley in Montana occurred in 1873. At this time there were but few white men in the valley. No authentic information of its occurrence among the Indians—who until 1890 inhabited the valley—has been obtained.

Since its first appearance probably 200 cases of the severe type have occurred, 70 to 80 per cent. of which have been fatal. During the spring of 1902 10 such cases have developed, 9 of these have died and one has recovered.

SEASON.

The disease occurs only in the spring. The earliest recorded case began March 17, and the latest about July 20, though most cases occur between May 15 and June 15. There are no records of any cases occurring between August 1 and March 17, though there are rumors of some cases having occurred as early as February.

PREVIOUS CONDITION OF PATIENT.

The sex, age and general health of the patient appear to have no part in determining susceptibility to the disease. A large number of cases give a history of recent exposure to wet or cold or of over-exertion shortly before the attack. But in several cases all such history has been absolutely excluded. Many of the patients had suffered somewhat from indigestion and constipation immediately prior to the attack. In others no such condition existed.

TYPES OF THE DISEASE.

Most physicians in the Bitter Root valley who have had experience with the disease recognize but one type, a severe and usually fatal form, the principal diagnostic feature of which is the "spots." Several physicians, however, recognize in addition a mild type in which there are no spots. There is much difficulty in the accurate diagnosis of the mild type, and though its existence must be recognized, yet, during the investigation herewith reported, all of the examinations except one were made on cases of severe type. The type of the disease which appears in Idaho, as described by Dr. Maxey, is apparently very much milder than that of the severe form appearing in Montana, though the cases all show the peculiar eruption.

SYMPTOMS.

Onset—Many of the cases are preceded by a short period of malaise. This is followed by a well-marked chill. The chill is usually most severe at the beginning of the attack and recurs at irregular intervals though with decreasing severity. At the onset there is a severe aching in the bones and muscles with pains in the back and joints. The patient is usually very weak and headache may be severe. Constipation at this period is usually present. There is considerable restlessness. A bronchial cough is frequently present. The urine is usually small in amount and highly colored; albumin is sometimes present. The skin is dry and the tongue, even at the onset, is thickly coated. The coat at first white becomes brownish as the fever increases while the tongue becomes dry and cracked. Sordes appear early and may be quite pronounced. Indeed, the whole facies in these respects is very like typhoid.

Temperature—After the initial chill, fever rapidly develops, and may reach 103 to 104 F. on the second day. It gradually increases and reaches its maximum in from five to seven days, when it may register from 105 to 107 F.[2] Usually a slight evening increase and morning decrease is noted. The temperature occasionally becomes normal or subnormal eighteen to twenty-four hours before death. Where recovery occurs it usually is by lysis, much as in typhoid. The diminution of the fever begins about the end of the second week and reaches normal about two weeks later.

Skin—The eruption usually begins from the second to fifth day after the chill, first about the wrist and ankles or back. It then extends over the entire body—the abdomen usually being involved last. Sometimes it spreads very rapidly, the entire surface of the body being covered in twelve hours. More usually, however, one or two days pass before it reaches the maximum. The scalp, palms of the hands and soles of the feet are frequently covered with the rash. Occasionally, though perhaps rarely, purplish spots are found on the mucous membrane of the inside of the cheeks. The macules are at first rose colored and consist of circular spots, varying in size from one to five millimeters in diameter. The spots are not elevated. At first they disappear on pressure, but quickly reappear. They are sometimes tender to the touch. This appearance ordinarily rapidly changes, the macules becoming permanent, assuming a dark blue or purplish color and increasing in size until by confluence a mottled or marbled appearance may be given to the skin, especially in the dependent portions. In some cases the marbling covers the entire body. The color now no longer disappears on pressure. In some cases the eruption at no time becomes confluent and only small brownish or purplish petechiæ may be present, giving a speckled appearance which has been likened to that of a turkey's egg.

The skin ordinarily shows some jaundice. This may also be quite marked in the conjunctivæ, the vessels of which are injected from the onset. About the second week ordinarily the skin presents a glazed appearance. Desquamation begins about the third week and extends over the whole body, but is slight except over the most affected areas. The spots fade as the fever subsides, but may not entirely disappear for weeks or months after convalescence is established. In some cases the skin becomes gangrenous over considerable areas, as on the elbows, fingers, toes, lobes of the ears, scrotum, etc.

There is a peculiar ashy paleness present, more readily observed in children and women, a few days before death.

Nervous System—Aside from the headache at the beginning, many patients show no nervous symptoms

2. Rectal temperature. The difference between the rectal and axillary temperature is sometimes as much as two degrees F.

until just prior to death. A low muttering delirium as in typhoid fever is present in severe cases, the patient being but partly rational. In the severe stages, picking at mouth, ears, bedclothing, etc., is present. Except at the outset, the disease is remarkable for its freedom from pain. The pupils react normally to light and accommodation. There is no opisthotonos. Kernig's sign is absent.

Circulatory System—The pulse at the onset is usually full and strong, but gradually becomes more and more rapid, while it loses in volume and strength, very much as in diphtheria. In fatal cases in adults it may reach 150 per minute some days before death. The rapidity of the pulse is sometimes out of all proportion to the temperature, as may be also the respiration. The red blood count in five cases examined was 4,100,000, 4,200,000, 4,300,000, 4,500,000 and 4,600,000 respectively.[3] There was a slight increase of leucocytes—from 12,000 to 13,000—in the four cases examined.

Blood, when removed for examination, appears to be somewhat darker than normal, as well as somewhat less fluid. On exposure to the air the color brightens perceptibly. In five cases examined during various stages of the disease the hemoglobin was 50 to 60 per cent. One child of 12 years, examined two months after convalescence, showed Hb. 80 per cent. Freshly drawn blood when examined with the 1-12 oil immersion objective shows parasites sparingly in the red blood cells. The Widal reaction with *B. typhosus* is not present. The spleen is uniformly enlarged and tender on palpation. In all severe cases more or less edema of the face and extremities is present. This may be marked and may appear as early as the third day of the disease.

Digestive Tract—At the onset of the disease the appetite is usually good and food is well retained and assimilated. About the beginning of the second week nausea and vomiting develop and continue in fatal cases to the end. In some cases nausea is present from the onset. Constipation is usually present from the beginning. Abdominal tympanites usually appears one or two hours before death. The liver is somewhat, though not markedly enlarged. Pain on pressure is absent.

Urinary System—The urine is reduced to about one-half its normal amount and is slightly above normal in color. A small amount of albumin has been found in each of the five cases examined. Hemoglobinuria is absent or very slight. Both granular and blood casts were present in specimens from each of the five cases.

Respiratory System—The respiration rate sometimes reaches 60 per minute in the adult, though ordinarily it does not run above 36 per minute. Like the pulse rate it is frequently out of all proportion to the temperature. It is regular, but usually shallow. It may be labored and accompanied by rattling due to accumulation of mucus in the upper air passages, during the last day or two of life. Cheyne-Stokes respiration has not been observed. Hypostatic pneumonia sometimes develops. Lobar pneumonia occasionally occurs as a complication and usually hastens the end.

Complications—The symptoms above noted are sometimes complicated by gangrene, hypostatic pneumonia, articular rheumatism, etc. Two physicians have noted epistaxis, but none has been present in any of the cases seen by the writers.

PROGNOSIS.

Dr. Maxey says, concerning the cases in Idaho: "The prognosis in spotted fever is, as a rule, very favorable if the patient is transferred to the lower valleys, where he can have home comforts and proper care. The disease appears to be more malignant in some localities than it is in others, and in one year more than in another."

In Montana cases of the mild type of the disease, which show no spots, are as yet too indefinitely differentiated to permit of their inclusion with those of the severe type which invariably develop the eruption. That such cases exist there can be no doubt. They are never fatal. On the other hand the cases which are marked by the eruption have a mortality of 70 to 80 per cent. Death usually occurs between the sixth and fourteenth days, though it has occurred as early as the third and as late as the eighteenth day.

Many cases in which the initial symptoms are mild become rapidly fatal.

MORBID ANATOMY.

Six autopsies were made by the writers, in from three to twenty-four hours after death of the patient.[4] Two of these were on adult males, two adult females, one four-year-old male and one five-year-old female. The macroscopic lesions were very uniform throughout the series of cases and may be summarized as follows: Intense rigor mortis appeared early. The skin over all dependent portions of the body presented a marbled appearance. Over the nondependent portions it was covered with a petechial rash. In all cases small wounds of the skin due to tick bites were present.

The pleura was normal. The lungs showed hypostatic congestion. The pericardium was normal. The heart was normal in size except in one adult female, in which it was about two-thirds the normal volume. The epicardium usually contained a few petechial hemorrhages near the base of the left ventricle. The myocardium was softened. The endocardium showed no lesions. The right ventricle was filled with dark fluid blood; the left was almost empty or contained only a small clot.

The spleen was enlarged, being from three to three and one-half times its normal weight. The capsule was distended and thinned. On section the tissue was found dark red and so soft as to be in most cases diffluent. The outlines of the Malpighian bodies were obliterated. The omentum covering the spleen was usually congested. In some instances the dependent portions of the stomach wall were hyperemic.

The intestines were normal—except slight hypostatic congestion in two cases—throughout their entire extent. Their glands were not enlarged nor abnormal in color. The liver was slightly enlarged, pale in color and of normal consistence.

In all cases one or both kidneys showed small subcapsular hemorrhages on the ventral surface. The capsule stripped readily. The cortex on section was congested. The bladder was normal and contained a small amount of urine slightly darker than normal. The uterus in the three females examined was apparently not affected.

The meninges of the brain and spinal cord showed a slight congestion, apparently hypostatic. There was no basilar (or other) meningitis. There was no increase of fluid in the ventricles of the brain. The tissues of the brain and spinal cord were normal in color and consistency.

MORBID HISTOLOGY.

Portions of skin taken from purpuric areas, lung, heart muscle, spleen, omentum, liver, kidney, meninges, brain and spinal cord were each fixed in 95 per cent.

3. It will be noted that these counts were made in an altitude of about 3,500 feet, where the normal count is above rather than under 5,500,000.

4. Five were made earlier than eleven hours after death.

alcohol, 4 per cent. formaldehyd and Zenker's fluid. These have not yet been all examined from every case, but from the examinations already made (of tissues fixed in alcohol and Zenker's fluid) it may be stated that there is throughout a congestion of the capillaries. Many red blood cells in the congested capillaries contain parasites.

In the spleen, liver and kidney are numerous phagocytes, each containing from one to eight faintly outlined red blood cells, in nearly every one of which is a parasite. In the lungs many cells filled with pigment are found. The myocardium shows acute inflammation with segmentation. The spleen is engorged with red blood cells and leucocytes. The stroma is not increased in amount. In the liver fatty degeneration is very pronounced. The kidney shows an acute parenchymatous nephritis. Blood preparations taken from organs at autopsy as well as those from living patient show a marked poikilocytosis and anemia.

ETIOLOGY.

General Considerations—In studying the etiology of this disease the following facts have appeared to be of most significance:

1. The disease is definitely limited in locality, being sharply cut off from the eastern side of the valley by the Bitter Root river.

2. It is confined entirely to one season of the year, namely, from March to July.

3. It attacks alike patients of any age and either sex.

4. All the symptoms and lesions indicate that the disease is due to a specific infection.

5. There is not even a suspicion of its ever having been transferred directly from one human being to another, except in one instance, in which an infant, born while the mother was suffering from the disease, died four days later with marked purpura.

6. In no instance have two or more persons with the same food or water supply been stricken with the disease within a short time of each other.

7. There are no symptoms nor lesions which point to the digestive tract, respiratory or genito-urinary organs as the avenue of infection.

8. In all the cases examined by the writers there were small wounds of the skin, said to have been made by the bites of ticks. In nine of the cases this history was definite and positive. In one—a child—no history of tick bites was obtained, though the skin wounds were present and ticks were numerous about the premises where the child had been playing. In three of the cases there was a history of a single severe bite, two, three and five days respectively before the onset of symptoms.

Bacteria—In six cases direct coverslip preparations were made from the patient's blood during life. No bacteria were found in any of these. In five of these cases cultures on Löffler's blood serum, plain agar and in bouillon were made from the same source as the coverslip preparations, after scrubbing the skin thoroughly with alcohol and permitting it to dry. Cultures from two of the cases showed a few cocci which were determined by subcultures to be *Staphylococcus epidermidis albus*.

At the six autopsies held—3, 7, 8, 10, 11 and 24 hours after death respectively—direct coverslip preparations were made from subcutaneous tissue, lung, pericardial fluid, heart's blood, spleen, liver and kidney. In but three autopsies was the central nervous system examined. Here coverslip preparations were made from the meninges and substance of the brain and spinal cord. The coverslip preparations were stained with eosin and Löffler's methylene blue, with eosin and Unna's alkaline methylene blue and by Gram's method. No bacteria were found in any of them except a few cocci in one skin preparation (in which case cultures showed the presence of *Staphylococcus epidermidis albus*), and in the preparations from the spleen, removed at the autopsy 24 hours after death, in which was present a large spore-bearing bacillus. (See description under "cultures.")

At the autopsies cultures were made from all the sources noted under coverslip preparations—and in addition in three instances from the intestinal contents—on Löffler's blood-serum, nutrient agar and in bouillon. About 1 c.c. each of spleen pulp and heart's blood were also sown into flasks containing 250 c.c. each of bouillon. The spleen in five cases, after removal of coverslip preparations, cultures and small pieces for histologic examinations (and weighing) was wrapped in gauze, which had been wrung out of 1:1000 sublimate solution, and incubated for 24 hours. Direct coverslip preparations and cultures on Löffler's blood serum, agar and in bouillon, were then made from the incubated organ.

All cultures were examined macroscopically and in coverslip preparations stained with Löffler's methylene blue. Great care was taken in all sowings to avoid contaminations, and in only two tubes did such occur, in each instance due to a single colony of mould. The cultures were grown only aërobically. The bacteria found were as follows:

1. *Staphylococcus epidermidis albus* from the skin in two cases.

2. *Staphylococcus pyogenes aureus* from the skin in one of the above cases.

3. *Bacillus coli communis* was sparingly present in cultures from the spleen in autopsy No. 4 (dead 10½ hours). This bacillus was also present mixed with but a few other organisms in all cultures from the intestinal contents.

4. The spleen from autopsy No. 5 showed a bacillus 0.5 microns in thickness and 5 to 7 microns in length. The organism was square ended and contained spores. It stained deeply by methylene blue and also retained Gram's stain. There was no visible growth on or in any of the artificial media, though it had grown in the incubated spleen. The organism was presumably an anaërobic putrefactive bacillus.

No growth whatever was present in any cultures excepting those above noted. It will thus be seen that no bacteria were obtained in any cultures from any case which were of etiologic significance.

Protozoa—A few ovoidal bodies were seen within red blood cells in stained direct coverslip preparations from cases 2, 3, 4, 5 and 6 early in the investigation. The character of these bodies was not determined, however, until microscopic examination of the fresh blood in case 7 was made. Similar examinations were made of the blood in cases 8, 9 and 10. In part of the examinations a warm stage was used, but in most of them it was not used, since it was found that if the blood were placed directly under the microscope and examined by artificial (lamp) light, in a warm room, the temperature was sufficiently high to preserve the organisms alive for several hours. In one instance they were successfully kept under observation in this manner for 5½ hours. In all of the examinations made of freshly-drawn blood (12 in all from 4 cases) intracellular parasites showing ameboid movements were found. In several of these observations extracellular forms were also found.

In the observations on freshly-drawn blood usually several fields were searched (with Zeiss obj. 1-12, Oc. 4) be-

fore any red cell was found containing a parasite. The same is true of stained coverslip preparations made from the blood of the living patient or at autopsy. Probably not more than one red cell in five hundred in the circulating blood is ordinarily infected. In one observation, however, made on the seventh day of illness in an adult male, on fresh blood many red cells containing parasites were found. In this specimen fields contained from 125 to 175 red cells (estimated). Of these fields, two contained 11 infected red cells, each of which held one or two parasites. Another field contained 9 infected cells, another 7, and three contained 5 infected cells each. Nearly every field held one or more infected cells.[5]

Another similar observation on the fresh blood from the same patient, made forty-eight hours later, revealed only a very small number of the infected red cells. In the meantime no material change in the clinical symptoms had occurred.

In direct coverslip preparations, and in sections from the lung, heart muscle, spleen, liver and kidney great numbers of red blood cells were found which contained one or more parasites each. In the spleen, liver and kidney were many phagocytes, which had absorbed one to eight infected red blood cells each. These were also present in preparations from other organs, though not in such large numbers.

The organism varies greatly in size, form and staining reaction at various stages of its development.

The smallest forms (phase 1) when seen in fresh (unstained) preparations or in freshly-dried preparations, unstained but mounted in iodinized gum-acacia, are intracellular, ovoidal in form, about one micron in thickness and one and one-half to two microns in length. They resemble slightly hyaline bodies in malaria, and very much the micro-organism of Texas fever. A few, but certainly not nearly all, of these bodies are stained by Löffler's methylene blue. When so stained the smaller extremity takes up more of the stain than does the larger extremity, which remains but faintly blue, even after prolonged staining. Perhaps one in ten of the red cells which are infected with this form of organism contains two instead of one of the bodies. When the organisms are in pairs within a cell, their long axes usually lie in the same straight line, though they may be placed at an angle as acute as 60 degrees. Their lesser extremities are often toward each other, though distinctly separated by a small interval. These bodies have occasionally been seen to change their position within the red cell, though the presence of pseudopodia or any other evidence of ameboid movement except the transference from place to place has not been observed in bodies of this size.

Several gradations in size, in both single and paired organisms, have occasionally been observed up to phase 2. This phase is marked by an organism solitary within the red cell, and usually ovoidal in form, though it may be elongated, ellipsoidal or spheroidal. It is from two to three microns thick and three to five microns long.

This type in freshly-drawn blood frequently exhibits active ameboid movements. These consist in the elongation of the organism, the projection of the pseudopodia in one or more directions, the final retraction of all pseudopodia and the assumption of the ovoidal form. Such an organism was kept under observation for three and one-half hours. During the first hour and one-half the ameboid movements were very active, changes occurring more rapidly than they could be properly sketched. At the end of this time a reddish brown pigment (?) granule 0.5 microns in diameter was apparently extruded from the body of the organism into the protoplasm of the cell. After this the pseudopodia were all retracted, the organism which had previously been much elongated and curved, slowly straightened out; became shorter and thicker, and finally came to rest, two hours and forty-five minutes after the beginning of the observation, as an ovoidal body about three microns in diameter at its thickest portion and five microns long. No further change occurred in the remaining forty-five minutes during which it was under observation.

In the freshly-drawn blood are sometimes found bodies (phase 3?) occasionally in pairs, and then resembling diplococci, which are about 0.5 to 1 micron in diameter and exhibiting active Brownian movement. In stained coverslip preparations from the blood of the living patient these bodies are occasionally seen. They vary much more in size than do cocci of one species, and sometimes, also, are ovoidal in shape. They stain but faintly with Löffler's methylene blue, and, indeed, in all respects resemble the smallest intracellular forms except that they are smaller, extracellular, less numerous and more diplococcus-like. In direct coverslip preparations made from the blood at autopsy no extracellular forms have as yet been found.

In marked contrast to the small number of infected cells in the circulating blood, is the great number of infected cells in the congested capillaries in the tissues removed at autopsy. Here from 1 to 5 per cent. of the red cells contain each a large parasite. This is especially marked in the lung, spleen, liver and kidney. In these organs many red cells are also included in phagocytes, being faintly outlined within the protoplasm of the latter and each containing a large parasite. The ovoidal form, however, of most of the parasites appears to be lost shortly after death, since although many of this form are present in the tissues from autopsy No. 6 (made three hours after death), but very few are present in the tissues from autopsies No. 1 and 2, made seven and eight hours after death. In these tissues the organisms are almost all spheroidal. In the tissues removed at autopsy the parasites are metachromatic to methylene blue. Sections stained in eosin followed by Unna's or Löffler's alkaline methylene blue and then decolorized in water and alcohol until the nuclei of the cells are a very light shade of blue, show the parasites still stained an intense blue. The same general appearance is obtained by staining sections twenty-four hours in Nocht-Romanowsky's blood stain, then washing out in water and alcohol. These stains have given the most satisfactory results, though the organisms may also be stained by fuchsin, hematoxylin, Jenner's blood stain, etc.

So far no differentiation of the protoplasm in the large organisms seen in the tissues has been made out by any stain. In a very few instances, however, small, intracellular ovoidal types have been found after death, and these have stained lightly though more intensely than in fresh blood.

It will thus be seen that the organism, while it resembles in its smaller form very markedly the *Pyrosoma bigeminum* of Texas fever, yet differs from that organism in being larger, and in its larger forms exhibiting active ameboid movements with the projection of pseudopodia. The absence of pigment from the organism of spotted fever would apparently separate it from the malarial group and place it with that of Texas fever.

5. The counts in this examination were made after the specimen had been for 3½ hours under observation at a temperature of about 33 C.

The writers, however, prefer to make a fuller study of the life history of the organism before attempting to classify it more definitely than as a hematozoön.

INOCULATION EXPERIMENTS.

About 0.5 c.c. each of the spleen pulp and heart's blood removed at autopsy No. 6 was inoculated, four hours after the death of the patient, into the breast muscle of two pigeons and also subcutaneously in the right groin of two white rabbits. The blood of the pigeons was examined for several days thereafter, but the organisms were not found. The rabbits, on the day following inoculation, showed a rise of temperature[6] of one degree C. At this time intracellular organisms were found in the blood of both rabbits, and continued present in specimens collected on successive days for two weeks. One of the animals was then killed. At autopsy the spleen was enlarged and darker than normal. It was not softened. There were no macroscopic lesions in any other organ. The tissues were preserved in 95 per cent. alcohol, Zenker's fluid and 4 per cent. formaldehyd. They have not yet been examined. The second rabbit is still alive, four weeks after the inoculation, and still shows the organisms present, though they are becoming very difficult to find.

MODE OF INFECTION.

Since there is no suspicion of spotted fever ever having been transferred directly from man to man, and since there is no symptomatic or postmortem evidence of entrance of the disease, either by way of the digestive tract, respiratory or genito-urinary systems, the writers were led to examine the skin for evidence of direct inoculation by the bite of some temporarily parasitic animal. As has been noted above, in each case under observation, during the investigation, evidence of tick bites was present. But it is true that in the locality in which the cases occur many persons in the spring of the year are bitten by ticks and yet show no symptoms of spotted fever. However, the following facts would seem to suggest the hypothesis that the disease is conveyed to man by means of this arachnid:

1. Ticks are known to appear in the spring as soon as the snow melts from the sunny exposures; in other words, in the Bitter Root valley, as early as February 15. They are, however, chilled and inactive until the latter part of March or first of April, and do not become very numerous until the latter part of April. In relation to this, scattering cases of spotted fever appear during the latter part of March and first of April, and are most numerous during May and June.

2. Ticks become less numerous about the middle of June, and finally disappear about the middle of July. In connection with this it should be noted that cases of spotted fever become less and less numerous from the middle of June to the middle of July, after the 20th of which month no cases have been observed.

3. The occurrence of spotted fever in isolated cases in a region sharply limited on one side by a river, would indicate the conveyance of the germ to man (if by any animal whatsoever) by a temporarily parasitic animal which travels slowly and not widely, and which is not carried far by the wind, etc. The tick answers this description.

4. All hematozoa of warm-blooded animals, of which the life cycle is now known, pass, at least, one phase of their development within the body of some host (usually an insect or arachnid) other than the one whose blood cells they invade. This is probably also true of the hematozoön of "spotted fever."

5. The malarial organism, the hematozoön which in man most nearly resembles that of spotted fever, is conveyed to man by the bite of an insect. The organism of Texas fever, in cattle, which is apparently a very close relative of the germ causing spotted fever, is conveyed to cattle through the bite of ticks. It is perhaps unnecessary to note that of the many genera of mosquitoes only one carries the malarial organism to man, and of the many genera of ticks only one carries the Texas fever organism to cattle; further, that even in these specific genera by no means all of the individuals are affected with the pathogenic parasite.

6. There are at least three (probably more) species of ticks within the region in which spotted fever occurs, and the specific selection noted under No. 5 may apply to these.

7. All of the patients, eleven, coming under observation during this investigation had been bitten by ticks. In three cases a history was given of a single severe tick bite two, three and five days, respectively, before the onset of the disease.

8. There is apparently no other insect, arachnid or other biting creature within the infected locality, which would fulfill the conditions indicated in the above outline as does the tick. For instance, it may be noted that the mosquitoes probably do not appear until a later date than that on which the earliest cases of "spotted fever" have developed, while they remain for several weeks after the spotted fever ceases. They move about freely and are readily carried by the wind. Were they the infective agents, one mosquito would probably infect two or more persons in the same family, and the disease would not be limited by the river. Bedbugs and fleas are present throughout the year and, from their persistent activity, would probably infect more than one individual in a family, were they the carriers of the disease.

The extreme isolation of cases of spotted fever, their occasional development in localities removed many miles from the site of any previous case, and the long period existing between the death or convalescence of the last case of any one year before the development of the first case in the following year, would point to the possibility of the red blood cells of some one of the lower warm-blooded animals being the normal habitat of the parasitic protozoön in that stage of its life cycle not passed within the body of some arachnid. Of the animals within the infected region, the common gray gopher would probably best fulfill the conditions of such a parasitism.

The writers are at present attempting to obtain data which shall confirm or demolish the above hypotheses.

A detailed report of the investigation will be published later by the Montana State Board of Health.

The writers desire to express their thanks to the Montana State University for the use of apparatus, stains, chemicals, etc.; to the Northern Pacific Beneficial Association, and Drs. J. J. Buckley and E. W. Spottswood, chief and assistant surgeons of its hospital at Missoula for the free use of its laboratory, apparatus, etc., and to the physicians of Missoula and the Bitter Root Valley, who have been most generous and enthusiastic in their assistance.

Missoula, Mont., July 1, 1902.

6. This may have been physiologic, though the animals were in a basement in a temperature of 20 centigrade, and were not excited.

The proper way to practice medicine is to recognize one's limitations rather than to be carried away with therapeutic optimism.—Hare.

SOME NOTES CONCERNING PREPARATION OF TEETH FOR MICROSCOPIC STUDY.*

MARTHA ANDERSON, M.D.
MOLINE, ILL.

The results obtained in working teeth for the past few years do not justify a paper on the subject, but these few notes are given to tabulate results—successes and failures—hoping to bring out criticisms on the methods used.

In decalcification the results have been far from satisfactory. In order to protect the dentine and get the pulp and dentine *in situ,* the slower methods of decalcification are better, but the delay has disadvantages. The acid mixtures penetrate and destroy the staining properties of the tissues and cause distortion. In order to save the pulp, the apical foramina were sealed with collodion or sealing wax; this has not been satisfactory, as the sealing material comes off in spite of careful handling.

Nitric acid in weak solution gives slow decalcification. A 2 per cent. solution with frequent changing every few days, took over one month to give results. Lee says HNO_3 causes no swelling and does not injuriously attack tissue elements. This has not been my experience, as it has caused much distortion and the tissue elements have been largely destroyed. It does, however, give fair sections of dentine.

Kleinenberg's method (Picric, 100 parts; H_2SO_4, 2 parts; H_2O, 300 parts) is exceedingly slow, requiring several (5) months.

Schaeffer's recipe preserves the dentine, but the tissue elements are distorted and staining properties destroyed.

Von Ebner's solution took four months, dentine preserved, tissue elements distorted and stained badly, but not so badly as the others.

Boll (H_2CrO_4) gradually preserves dentine (two months), tissues distorted.

Haug's method (Phloroglucin 1, HNO_3 10, water 100) is rapid and has the advantage of penetrating dentine; the pulp tissue, however, is distorted and stained badly.

Huber's recipe (HNO_3 5 parts, HCl ½, H_2O 100) is rapid, requiring only a few days. It also causes distortion.

H. Smith's' recipe (HCl 10 per cent., 12cc, 16 hours; and HNO_3 1.5cc, 46 hours; 1.5cc HNO_3 66 hours) acts rapidly, entirely destroying the dentine and pulp structure.

H_2Cro_4 55 (H. Smith) is rapid, 8-9 days, destroys dentine and structure of pulp.

Andrew's solution is the only one that has given me any results that I can call good. (H_2Cro_4 140, HNO_3 6, water 400.) Its disadvantages are its very rapid action, the solution in full strength completely destroying the entire tooth in a few hours. I have gotten results from using half strength and changing very frequently, about every hour. If the tooth is forgotten for a few hours it is apt to be destroyed. If one is required to give attention to other matters for a time the specimen must be removed from the solution and placed in water, returned to the solution again when convenient to watch it. Even then decalcification is apt to take place unevenly, and sometimes in spite of great care the pulp is attacked and partly destroyed by the acid. After this solution sections have stained very well.

In preparing pulps for microscopic study, the pulps were removed from fresh teeth and hardened in Müller's fluid. Flemming or formalin have given the best results. For staining cellular elements a good hematoxylin combined with eosin or Van Giesen's method is very satisfactory.

As a special nerve stain, Weigert's method for medullated nerves as follows: Harden in Müller's fluid, stain in a saturated solution of neutral acetate copper 24 hours, wash and pass into a stain composed of hematoxylin 1, alcohol 10, water 90, saturated solution lithium carbonate 1, for 24 hours. Then rinse in water and decolorize in borax 2, K. ferricyanide 2.5, water 200. The nerve will stand out a deep brown compared to the other tissues. In studying sections by this process the nerve trunks can be seen running from the apex of the pulp and branching off higher up, the fibrils running along the outer edge of the pulp just beneath the layer of odontoblasts. In a few cases I have been able to trace the nerve fibrils out between the odontoblasts, but not into the dentine.

In pulps hardened in Hermann's recipe, the nerves can also be traced. In pulps prepared by Weigert's recipe the pulp stones (?) are stained dark brown as the nerves. If they are pulp stones, why do they stain thus?

So far the stains used for fibrous tissues and fat have been unsuccessful, but I have not yet completed my work in this line.

1420 Fifth Avenue.

DISCUSSION.

DR. VIDA A. LATHAM, Chicago—I would like to say that this work is going on with the work of Dr. Talbot to discover some way of preparing the teeth that will give results superior to those already quoted. Those usually quoted are from general histologic work and are inferior. A tooth that is decalcified has to lose some structure. If we lose the dental structure we also lose the pulp structure. The nerves fibers we do not fully understand. We have to be very cautious in making specimens; one batch will stain beautifully, the next not at all. Two pulp sections passing through the same solution will have results entirely opposite. Even hematoxylin will not stain the same in two sections of pulp. We see so many pathological changes that we have been astonished with the different results. We have not yet obtained a normal standard of pulp area. Our results bear out one or two of the statements given in Professor Andrew's paper. We consider the importance of this structure equal to that of enamel and dentine. The peculiarity of the pulp lies in its blood and nerve supply. The term myxomatous tissue is in dispute. If we use that term we are out of the bounds of histology, because it is not normal tissue or at most very embryonic. The term enamel organ is complex. The term dental papilla is unsuitable until at a later period of development.

DR. EUGENE S. TALBOT, Chicago—I do not think it possible to study the diseases of the teeth without first studying the evolution of the pulp. There is no structure in the human body that has undergone such a change as the dental pulp, and yet there is nothing, or very little, taught in dental schools regarding it. The dental pulp has reached its highest development in man before it commences to develop the dentine. From that time on the pulp recedes, and there is no question in my mind but that it becomes a degenerate organ from that period. I think that is the reason, as Dr. Latham said, we are unable to ascertain what a normal pulp is. I quite question if there be such a thing as a normal healthy pulp, as it is impossible to obtain two slides or two specimens alike in the same pulp. I do not believe there is a structure of the human body that has such a variety of histologic conditions.

DR. WILLIAM KNIGHT, Cincinnati—It has occurred to me, in regard to injecting into the capillaries, that the siphon method with a very dilute saline mixture would be very satisfactory.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Stomatology, and approved for publication by the Executive Committee: Drs. G. V. I. Brown, M. H. Fletcher and R. R. Andrews.

The vessels, after being cleaned out, become very lax and afterward such injections as are desired can be made. I think in that way you can get very fine capillary injections. I make this suggestion merely as such, and not as the result of my practical work in histology. It works very beautifully in injecting the vessels of the mesentery.

DR. M. L. RHEIN, Philadelphia—The difficulty in securing a proper microscopic specimen of the pulp is one that confronts us continually, and I do not think the solution of the scientific treatment of the pulp will be solved except by microscopic preparation. The clinical experience has taught us empirically the solution of many mooted points, but there is much to be cleared up by pulp specimens under the microscope. I do not know of any one more fit to cope with the solution of this problem than Dr. Latham with all the ingenuity and skill she has given to the work.

DR. H. H. BUTTERFIELD—Coming in as the paper was nearly finished, I heard a statement regarding the pulp stone and I would like to ask the conclusion.

DR. LATHAM (reading from her paper)—Dr. Anderson says the stones are stained dark brown as the nerves. If they are pulp stones, why do they stain? We have used the teeth the moment they are extracted and after they have been extracted for some time and are dry and mummified, and again, while still in the jaw. We have tried to collect some thousands of teeth to prepare by every possible method. Later we hope to tabulate these results. My paper yesterday was not a conclusion, but a statement of what others have said on the subject, showing the differences of opinion. This question on pulp stones in Dr. Anderson's paper was brought out because I had said to her: "How is it you get the staining in the pulp stones?" She said she did not know. I asked her to take these pulps and break them down, and she used almost every acid known, but without success. Professor Black says he can break them down. Some do not break down. If they do not break up by any chemicals, what is the structure? One peculiarity in my photographs is that the nerve fibers work through and around the stones something like this diagram on the board.

Another point is that the pulp stones are more common in some slides at the apex of the pulp not the coronal point. The trunk of a nerve fiber coming down in the pulp being split it makes a spiral formation around the pulp stones. I have other specimens again where the nerve fibers run up outside following the fiber and avoiding the pulp stone. Why do the nerve tissues take the stain the same as the pulp stones? One argument is that they are of nerve formation.

DR. M. L. RHEIN—Do not the formative cell fibers take the stain?

DR. LATHAM—If I remember rightly, Dr. Andrews says, formative fibers in relation to odontoblasts. He evades the question just as we all have done. They do not stain alike. Then again, the matrix which is formed does not stain the same as the odontoblastic fibers. These are points about which I am almost in despair. If these are not normal teeth, then we do not want to work with them. If they are normal teeth, we want them. The matrix, as I understand, is the connective tissue material underneath the layer of odontoblasts. Why these pulp stones take the stain of the normal tissue is a big question. Dr. Paul makes the statement that the odontoblast is not a formative cell. Gentlemen like Dr. Andrews who have made the study of the dentine a specialty are better able than I, who am studying the formative pulp, to answer these questions. The origin of the odontoblastic cell I believe the keynote to the matter. I would be greatly obliged if any of you gentlemen can tell me who quoted the odontoblastic cell as a mesoblastic cell. Where that statement originated I do not know. We know that when a paper is first written it becomes altered by other journals publishing it. Each man who reads the paper makes his own conclusion; that is, he makes his own theory. I would naturally make another theory fit with mine. It is a fault, but then it is done.

It seems to me that if we agree that the odontoblast is secretive and is a dentine-forming organ we put it in the epiblastic or hypoblastic layer, because on analogy the glands of the stomach are first secretive. If of connective tissue origin then the odontoblast is mesoblastic, but if it is nerve tissue then we should place it in the epiblastic layer. In the lower animals it is on the same basis. Then if it secretes it should belong to a secretive origin. We know that all the glands are hypoblastic except those opening into the mouth. The date of the development of the odontoblastic layer I do not know as yet.

DR. R. R. ANDREWS, Cambridge, Mass.—The first formation of the dentine germ takes place in a mass of embryonic connective tissue, where there is apparently nothing but the connective tissue cells. There is a gelatinous substance thrown out on the periphery of the germ, and these outer cells that were connective cells differentiate into formative cells. They must be differentiated from the embryonic connective cells, because they originate in the midst of embryonic connective tissue. I question the existence of a so-called basic membrane.

DR. LATHAM—A new paper I have now seems to point out that they are nerve tissue. If they are the terminal nerve endings they can not be of connective tissue origin. The results of (Morganstern) have not been reproduced by other investigators. In my research I hope by improved technic to get the fiber into the cell protoplasm and in that way prove or disprove the point in dispute.

Physicians' Golden Age.—The present era seems to be the golden age for physicians. Every country appears to be bent upon overwhelming them with honors and dignities of one kind and another. In the list of honors granted ten days ago by King Edward on the day set for his coronation, the medical profession figures more largely than any other calling. A physician has just been intrusted by the President of the French republic with the duties of premier, while here in the United States we find a medical man on the high road to the command of the army, after having filled with such signal success offices of exceptional difficulty, delicacy and responsibility as to lead to his being publicly extolled by the chief magistrate of the Commonwealth as the most valued and valuable of the latter's servants. It is difficult under the circumstances to realize that as recently as the early portion of the reign of Queen Victoria physicians had virtually no place in European society. They were merely tolerated when eminent. To put the matter in plain English they were not regarded, socially speaking, as gentlemen. This was due in part to a survival of the olden days when the surgeon and the apothecary stood on the same social level as the barber, the three offices being often united in one and the same person. To-day we find doctors being ennobled by nearly every one of the sovereigns of Europe. There are some two score baronets and knights in the medical profession of Great Britain, as well as a peer in the person of Lord Lister. Emperor William has conferred patents of nobility upon Dr. Ernest Leyden, the famous German physician, who attended the deathbed of the late czar, upon Dr. Koch of bacilli celebrity, and upon a number of other stars of the medical profession in Germany and abroad. To the regent of Bavaria belongs the credit of having converted Dr. Roentgen, the inventor of the *x*-rays, into a full-fledged baron. In republican France physicians have in late years received the highest grade of the Order of the Legion of Honor, and not only several princes of royal blood have adopted medicine as a calling destined to enhance their usefulness to their fellow citizens, but there is likewise a full-fledged queen, namely, the French consort of King Carlos of Portugal, who, having passed all the requisite examinations, is now entitled to add the letters "M.D." to her name, in addition to the word "Regina." The extent indeed to which the medical profession has raised itself in the eyes of the people, may be seen by the fact that when the other day the London *Lancet* recommended that one of the three boys of the Prince of Wales should be reared as a physician, giving as its reason that the English medical profession "has long merited acknowledgment, and the finest acknowledgment would be the enrolment in their body of a prince of the blood," the idea met with widespread expression of approval, several notable cases on the continent being recalled where royal personages have taken the trouble to require this, the grandest of all callings, and to render themselves more than ordinarily useful to their fellow creatures, the late Empress of Austria's brother, for instance, being able to claim to have restored the sight to more than three thousand people, from whose eyes he has removed cataracts during the last twenty years.—*Boston Evening Transcript.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

61 Market Street : : Chicago, Ill.

Cable Address: "Medic, Chicago"

Subscription price: Five dollars per annum in advance

SATURDAY, JULY 19, 1902.

GOUT IN THE UNITED STATES.

A very interesting evolution of American medical opinion has occurred with regard to the frequency of gout in this country. A sort of culmination was reached in the recent announcement at the Saratoga meeting from the statistics of Professor Osler's clinic at Johns Hopkins that—among ordinary hospital patients at least—the disease is only one-third more frequent in England than in the United States. Twenty-five years ago there was almost a consensus of opinion among American medical authorities that true gout was rare in this country—so rare, in fact, as compared with its frequency in England, that a typical case of gout occurring in a person not of recent English extraction and without gouty heredity, was considered a medical curiosity. Garrod, the English authority on gout, said that it was a rare disease in America, and Sir Dyce Duckworth declared that our mixed race would keep it out of this country for many years. Dr. H. C. Wood of Philadelphia stated a few years ago that genuine gout was so infrequent in the United States that he had seen but two cases of typical Sydenham's gout in all his experience.

The impression was evidently developing, however, that gouty tendencies were not so rare in America as had been imagined. The late Dr. Da Costa[1] of Philadelphia especially insisted that, while well-marked gout was infrequent, suppressed gout or lithemia was not rare. This latter affection was characterized by the signs of functional liver derangement, some vertigo, mental gloom with cramps in the legs and tendencies to neuralgic attacks. These symptoms were in many patients only the precursors, though in some cases the long precursors of a regular attack of gout. He also pointed out that after years of these indefinite symptoms the local lesions of true gout may follow in the internal organs and we may have the same form of contracting kidney and the heart affection with hypertrophy and the accented second aortic sound so characteristic of genuine gout. Men like Professor Pepper dwelt on the importance of lithemia as a sort of American gout, evidently with the idea, moreover, that true gout was not so rare here as was thought. Dr. Gilman Thompson was clearly only taking his proper place in the evolution of the American mental attitude toward gout when he said[2] that though goutiness and the gouty diathesis are confessedly prevalent, it is doubtful if gout will ever become nearly so frequent in the United States as it has been for centuries in England.

Professor Osler's statistics with regard to gout in America as given in the paper read by Dr. Fletcher before the medical section at Saratoga, would seem to show that the tendency to true gout in this country has developed more rapidly than even our best clinicians imagined possible, though they distinctly foresaw that the affection was on the increase. The statistics of Johns Hopkins Hospital and of St. Bartholomew's Hospital, London, for the last thirteen years certainly seem a fair basis of comparison for the frequency of the disease among hospital patients in the two countries. It is not a little surprising to find the American so little behind the English institution in this respect. Most thoughtful practitioners would have said at once that gout must be at least three to four times more prevalent in England than in this country. In the hospital records, however, there are proportionately only four cases in England to every three in America. It should be remembered, of course, that these are only hospital statistics and may not represent the true general morbidity in the two countries.

The etiologic elements found to be at work in this country in the production of gout, are mainly the free consumption of malt liquors and lead poisoning. A notable proportion of the patients at Johns Hopkins were workers in metals that brought them frequently in contact with lead, though sometimes they had exhibited but very slight symptoms of an acute character from the presence of lead in the tissues. Curiously enough, despite the prevailing impression of the overweening influence of heredity in gout, this factor did not play an important rôle in the etiology of American cases of gout. The Baltimore patients, in the expressive Johns Hopkins phrase, "earned their gout for themselves and did not inherit it." The increasing use of malt liquors in this country, even though mostly of the milder kind, evidently portends an increase of the frequency of gout for us that will eventually bring us still nearer to the English statistics. There has always been an impression that the damp and foggy climate conspired with the habits of the people with regard to food and drink to make gout frequent in the British Isles. Gout has never been limited narrowly in its occurrence, however. It must not be forgotten that Hippocrates described the disease very perfectly nearly 500 years before Christ in Greece, and Galen dilated especially on the presence and nature of the tophi over the joints that are, even down to our own day, the pathognomonic signs of genuine gout.

It is important then that gout should be looked for more carefully in this country than has been the custom up to this time. Undoubtedly many cases of slightly atypical gout now masquerade as examples of anomalous rheumatism. It is probable that we would hear of fewer cases of rheumatism in which the salicylates fail to be

1. "Medical Diagnosis," p. 812.
2. "American System of Practical Medicine," vol. ii.

of benefit, if the mistaken cases of gout were carefully eliminated from the reports. At Professor Osler's clinic they confess with a candor well worthy of emulation that one of their patients had been admitted several times as a supposed sufferer from rheumatism before the discovery of tophi led to the diagnosis of gout. A review of the case then made it clear that this should have been the diagnosis on previous admissions. The incident showed how readily a mistake in this apparently simple matter may be made even by careful diagnosticians unless suspicion is aroused and special search made for possible stigmata of gout. In a word, the rarity of gout in America is a thing of the past and must no longer be assumed as an important element of diagnosis by exclusion in cases where the exact character of a painful joint affection is not easy to make out.

PNEUMOCOCCUS ARTHRITIS.

The publication of not less than six papers on arthritis due to the pneumococcus during the past eighteen months has brought into prominence one of the effects produced by this organism which has not previously received as much notice as it probably deserves. These recent publications have been written by men in various parts of the world; two in England, three in America, one in Germany; and with previous French articles they indicate that these joint complications are confined to no locality. In one of the latest and most exhaustive publications on this subject, Herrick[1] has collected 52 cases from the literature and his personal experience. The comparative infrequency of the condition is shown by the absence of a single case among large numbers of cases of pneumonia in many hospitals. Two factors appear to be particularly important in determining the localization of the pneumococci in joints. One is alcoholism, which was noted by both Raw and Herrick, and the relatively large number of cases coming under the personal notice of these two observers may probably be explained by the fact that alcoholics were common among their pneumonic patients. Previous damage to joints from trauma, rheumatism, gout, etc., is the other factor which has appeared to have some influence in rendering them more susceptible to the localization of pneumococci. Although the infection is most often associated with lobar pneumonia, in some instances no pulmonary inflammation has been present. Such a case, unassociated with acute lobar pneumonia, in which there was a pneumococcus septicemia, meningitis and arthritis, has been described by Cole.[2] In many of the cases reported the arthritis was accompanied by endocarditis, empyema, meningitis, etc., and in some pneumococci were found in the blood during life. This points toward a general dissemination of the bacteria through the blood, and probably explains how the organisms reach the joints, their subsequent effects on the joints depending on local conditions which produce reduced resistance. Several observers have obtained pneumococci from the blood during lobar pneumonia; some, like Prochaska, in almost all cases, most, like Cole, in about 30 per cent. of the cases. All of the nine out of thirty cases of pneumonia in which Cole[3] found pneumococci in the blood ended fatally, and the organisms were found only during short periods before death—from three days to seven hours. Since the arthritis usually develops after the crisis, the rarity of this condition may be partly dependent on the early death of most patients after the bacteria enter the blood, and before the joint inflammation has had time to develop. Herrick explains the occurrence of arthritis in the latter part of pneumonia or during convalescence by the fact that experiments on lower animals have shown the joints to be more vulnerable after a certain degree of general immunity has developed. The arthritis is usually purulent, but may be serous. Usually only one of the larger joints is affected, the knee most frequently. The inflammation may be confined to the lining of the joint or may involve cartilages and bones, and sometimes it extends to the peri-articular structures. The diagnosis is made by the bacteriologic examination of the fluid obtained by exploratory puncture. Of the cases collected by Herrick over 65 per cent. were fatal. The high mortality probably depends largely upon the general septicemia. Although some cases have recovered under expectant treatment or after aspiration, the rational treatment of all, except very mild cases, is early incision and drainage. Herrick warns against doing too much damage to the joint structure by over-radical and unusually thorough operation.

1. Amer. Jour. Med. Sciences, July, 1902, 12.
2. Amer. Med., May 31, 1902, 905.

THE OCCURRENCE OF MALARIAL FEVER IN THE NEWBORN.

That disease may be conveyed from the mother to the fetus in utero there can be no doubt, but it is equally certain that this channel of infection is not a common one. Of course, the newborn child may acquire any of the transmissible diseases from which its mother may be suffering, and it is the more likely so to do by reason of the necessarily intimate contact between them. It would seem as if, under ordinary circumstances, the placenta acted somewhat as a filter through which passed only fluids and substances dissolved in them. This would not prevent the passage of toxins from the blood of the mother to that of the fetus, with the attending effects and sequels. In the presence, however, of disease of the placenta, particularly if attended with hemorrhagic lesions, it seems not impossible that microorganisms might pass from the maternal to the fetal circulation and give rise to disease that would be manifested at birth. Occasional instances of this kind have been reported, and such an occurrence seems not beyond the range of possibility in connection with any of the infectious diseases from which the mother may

3. Johns Hopkins Hospital Bulletin, June, 1902, 143.

be suffering. A difference of opinion has been expressed as to the occurrence of malarial fever in the newborn, acquired in utero from the parent, and such evidence as exists is, it must be admitted, not of an absolutely convincing character. A case in this category is that recently reported by Dr. Lindsay Peters.[1] A pregnant woman, 27 years old, had suffered from repeated outbreaks of malarial fever, a paroxysm occurring after a long interval on the day of parturition. Shortly before the birth of the child the woman had a severe rigor, followed by fever and sweating. Uterine contractions at once set in, and the child was readily expelled after a few pains, without assistance. The patient again had a severe chill on the third day, when examination of the blood disclosed the presence of tertian malarial parasites. The organisms, however, could not be found in the infant's blood at this time. In the course of seven weeks the child grew pale yellow in appearance and the spleen became enlarged, and on the fifty-first day tertian malarial parasites were discovered in the blood. Recovery followed upon the administration of quinin, one grain thrice daily. As the child was born and had remained on the third story of a house in a non-malarial locality, where mosquitoes were not known to have been present, it is believed that the infection was of intrauterine origin. While this conclusion cannot be successfully controverted, it must be admitted that the evidence on which it is based is not of such a character as to remove all doubt and permit of its unqualified acceptance. In view of the uncertainty surrounding the whole question it is desirable that the blood of the newborn shall be examined whenever the suspicion of malarial fever arises.

1. Bulletin of the Johns Hopkins Hospital, June, 1902, p. 139.

CHYLOUS ASCITES.

Any of the serous cavities of the body may occasionally be the seat of a milky effusion, although the abdomen is so most commonly. A distinction must be made between such milky effusions as actually contain chyle and those that, presenting a similar macroscopic appearance, are found to contain the products of fatty degeneration of varied origin. The one condition is due to escape of chyle from its proper channels, the other to the formation of fat from degeneration of epithelial cells, leucocytes, carcinomatous and tuberculous nodules. The fluid in the former consists of a fine emulsion containing few cellular elements, while the fluid in the latter is characterized by the presence of a large number of cells in all stages of degeneration and also fat-drops. Truly chylous effusions accumulate and reaccumulate rapidly, while those that are only fatty or chyliform collect more slowly in accordance with the course of the underlying affection. The former are likely to contain sugar; the latter are not. The amount and the melting-point of the fat present in cases of chylous ascites vary with the amount and the melting-point of that contained in the food, while these factors have no influence upon the constitution of chyliform ascites.

Chylous ascites may result from traumatic rupture of the receptacle for the chyle or of the thoracic duct, or from interference with the flow of chyle through the normal channels, as, for instance, from stasis in the innominate vein resulting from heart-disease, obliterative thrombosis of the vein and occlusion of the thoracic duct, from mediastinal tumors pressing on the duct, infradiaphragmatic tumors compressing the receptacle for the chyle, tumors seated in the course of the smaller chyle branches and causing occlusion. The condition is not a common one and the diagnosis can be made only by examination of fluid obtained on puncture or section. An illustrative case has recently been reported by Dr. E. Pagenstecher.[1] This occurred in a female child, 19 weeks old, in whom progressively increasing tumefaction of the abdomen had been noted since the age of 3 weeks. On puncture 2300 c.c. of milky fluid was evacuated. In the course of 2½ weeks a large amount of fluid had again accumulated. Celiotomy was now performed and more than 1500 c.c. of fluid was evacuated. The peritoneal blood vessels were in part injected and the lacteal vessels distended. The child recovered and there was subsequently no recurrence of the effusion. The fluid obtained was odorless, alkaline in reaction, milky in appearance with a yellowish tint and it had a specific gravity of 1013. On standing no layer of cream formed and it did not undergo decomposition. It contained 2.87 per cent. fat, 0.32 per cent. sugar. Microscopically it was found to consist of a fine emulsion. A few cells were present, but no bacteria. Shaken with ether the fluid did not become entirely clear. No perforation or rupture or new formation or anatomic anomaly was found and it was concluded that the chylous ascites was due to stasis and this in turn was attributed to a chronic peritonitis from which recovery ensued as a result of the abdominal section and exposure of the inflamed peritoneum.

1. Deutsches Archiv für klinische Medicin, Bd. 72, H. 2, p. 104.

THE DATE OF THE NEW ORLEANS MEETING.

May 5 to 8, 1903, is the date set for the fifty-fourth annual meeting of the American Medical Association at New Orleans.

DR. SIMMONS' ILLNESS.

The Editor of THE JOURNAL, who has not been in good health for several months, underwent an operation for gallstone disease July 13. The result of the operation confirmed the diagnosis, as a large gallstone was removed from the entrance to the cystic duct. Dr. Simmons is thus far making good progress to recovery. He is expected to be absent perhaps two months for recuperation.

NEW ILLINOIS PRACTICE STANDARDS.

The Illinois State Board of Health has adopted, according to the press reports, a new schedule of requirements for license to practice medicine. After Jan. 1, 1903, the candidate for license must show evidence of

having attended four courses of lectures of at least seven months each, and medical colleges, to be recognized as in good standing, must require as preliminary qualifications for their students a high-school education or its equivalent as shown by examination. This will materially reduce the number of medical colleges recognized by the board, and puts Illinois more to the front among the states demanding higher qualifications. Under existing conditions the graduates of a considerable number of medical colleges will be barred from examination in Illinois.

CONCEALMENT OF PLAGUE.

A Hong Kong correspondent[1] reports that during the early part of May four or five cases of bubonic plague were reported or discovered daily, and that while every effort was made to discover the early cases, the co-operation of the Chinese was not obtained. Some of the cases apparently were discovered only when the bodies were dumped out on the streets by unknown parties. This throws a little light on San Francisco possibilities. If in Hong Kong, with every effort being made to reveal—not to conceal—plague, including regular house-to-house visitation, such difficulties are encountered, how much better a chance for its concealment must exist in San Francisco, where not only the Chinese but the civil authorities are actively interested in the suppression of all facts.

ALCOHOL IN TUBERCULOSIS.

Attention has been directed by THE JOURNAL to investigations made by various students according to which the general effects of alcohol upon animals is to render them more susceptible to infections and to make them more liable to succumb to infections when they occur. Some observations by Mircoli[2] appear to show that alcohol may exercise a beneficial influence in cases of pulmonary tuberculosis. By means of certain tests he determined the antitoxic power of the blood serum of healthy persons and alcoholics against an aqueous tuberculin, by finding the quantity of serum required to render inactive the minimum fatal dose of tuberculin for guinea-pigs. In an alcoholic patient, suffering from acute alcohol poisoning, he found the serum possessed a much greater antitoxic power than that from healthy persons. In other alcoholic patients the antitoxic power was less than in this one, but still greater than normal. When the general health of the patient had been much disturbed by alcohol the antitoxic power of the blood was lost. Mircoli found that among dock laborers, those who indulged freely in alcohol were equally affected by phthisis with those who did not take much alcohol, but the mortality was less among the former. He concludes that alcohol, under some circumstances, appears to possess the property of bringing about a neutralization of the poison of tuberculosis, something as blood serum does, and that alcohol in liberal but not extreme quantities is useful in cases of simple tuberculosis of the lungs. These observations again open the old question over which clinicians have so often differed. It is not likely that the results reached by this investigator will pass unchallenged, and very much more clinical observation under various conditions will be needed to confirm them.

1. British Med. Jour., June 21.
2. Münch. Med. Woch., March 4, 1902.

AGGLUTINATION OF PNEUMOCOCCI.

So long ago as 1891 Metchnikoff observed that pneumococci grown in the serum of immunized animals form long chains in place of diplococci. This was confirmed by a number of observers, and Bezancon and Griffon[1] noted the occurrence of similar phenomena on the part of pneumococci added to the serum of patients with pneumonia, especially on or about the day of the crisis. This reaction, which is a form of agglutination, is best seen in mixtures in the test tube where a distinct precipitate forms. The addition of pneumococci to normal serum gives only a diffuse cloudiness. These authors found that the serum early loses the power of agglutination. Recently Neufeld[2] has brought important additional observations upon this phase of the behavior of pneumococci. While normal serum does not materially alter the form or relation of pneumococci, 24 to 48 hour bouillon cultures mixed with equal parts immune serum (serum from patients passing through pneumonia or from animals immunized against pneumococci) show a pronounced swelling of the outer parts of the coccal bodies, which may increase up to three or four times the normal size at the same time as they lose their power of being stained except in the central part. Subcultures are obtainable readily from these mixtures. Indeed, the same change occurs with cocci previously killed by heat or other means. In mixtures of the proportion given small aggregations of cocci may result after a time, but when one part of serum is added to four to eight parts of bouillon there takes place more regularly an arrangement of the cocci into long threads which are wound into balls. The extent and rapidity of this phenomenon seem to vary considerably with different serums. Neufeld shows that while heat does not destroy the agglutinable part of the cocci, heating to 100 C. destroys the agglutinating property of the serum. As races of pneumococci lose their virulence they also lose agglutinability. Neufeld strongly favors Bordet's conception that as the so-called agglutinating substances become fixed to agglutinable bacteria there result marked modifications in the molecular attraction of the latter in consequence of which the arrangement peculiar to agglutination takes place. The interesting arrangement into long chains as the second phase of agglutination of pneumococci certainly appears to support this physical theory of agglutination as opposed to the idea that agglutinated bacteria are carried down by the formation of specific precipitates. As yet it does not seem as if much definite practical value can be derived from the application of these reactions to clinical medicine. Further experimental work must be carried out so that the uncertainties and variabilities of the reactions are overcome and controlled before they can be of use in daily practice.

1. Ann. de l'Institut Pasteur, 1900, xiv, 449-463.
2. Zeitschr. f. Hyg. u. Infectionskr., 1902, xl, 54-72.

Protect Texan Border.—The U. S. Marine-Hospital Service is carefully watching points of entry on the Texan border for passengers from Vera Cruz, where yellow fever is prevalent. The border is only 47 hours distant from Vera Cruz by rail.

Medical News.

DISTRICT OF COLUMBIA.

Tribute to Dr. Winter.—At a recent meeting of the board of directors of the Eastern Dispensary and Casualty Hospital, Washington, resolutions were unanimously adopted paying tribute to the memory of the late Dr. John T. Winter.

For Municipal Hospital.—The District Commissioners have forwarded to Congress a recommendation from the health officer, Dr. William C. Woodward, that $50,000 be provided in the District appropriation bill for continuing work on the Municipal Hospital.

Columbian Commencement.—The medical department of Columbia University held its eighty-first annual commencement exercises at Washington, June 4, graduating a class of 33. Dr. Henry B. Deale, Washington, delivered the doctorate address on "The Laws of Inheritance in Disease," and President Samuel H. Greene conferred the degrees.

Regulation of Sale of Virus.—The District Commissioners have reported to Congress on the Senate and House bills "To regulate the sale of viruses, serums, toxins and analogous products in the District of Columbia, to regulate interstate traffic in said articles, and for other purposes." They propose several amendments suggested by the health officer, and with these changes made recommend the adoption of the measure. One of the amendments creates a board to regulate the sale of toxins, etc., and reads as follows:

Section 4. That the surgeon-general of the army, the surgeon-general of the navy, the supervising surgeon-general of the Marine-Hospital Service, the chief of the Bureau of Animal Industry of the Department of Agriculture and the health officer of the District of Columbia be, and they are hereby, constituted a board with authority, subject to the approval of the Secretary of the Treasury, to promulgate from time to time such rules as may be necessary, in the judgment of said board, to govern the issue, suspension and revocation of licenses, for the maintenance of establishments for the propagation and preparation of viruses, serums, toxins, antitoxins and analogous products, applicable to the prevention and cure of diseases of man, intended for sale in the District of Columbia, or to be sent, carried or brought for sale from any state, territory or the District of Columbia, into any other state, territory or the District of Columbia, or from the United States into any foreign country, or from any foreign country into the United States.

Provided, That all licenses issued for the maintenance of establishments for the propagation and preparation in any foreign country of any virus, serum, toxin, antitoxin or product aforesaid, for sale, barter or exchange in the United States, shall be issued upon condition that the licentiates will permit the inspection of the establishments where said articles are propagated and prepared, in accordance with Section 3 of this act.

Sec. 5. That the Secretary of the Treasury be, and he is hereby, authorized and directed to enforce the provisions of this act and of such rules and regulations as may be made by authority thereof; to issue, suspend and revoke licenses for the maintenance of establishments aforesaid; and to detail for the discharge of such duties such officers, agents and employes of the Treasury Department as may in his judgment be necessary.

ILLINOIS.

Globe Hospital Open.—Globe Hospital, Freeport, has been completed and was opened to the public, June 28.

Staff for Moline Hospital.—The staff of the Moline City Hospital met July 8 and elected Dr. Jonathan M. Wyland, president; Dr. Albert M. Beal, vice-president, and Dr. Albert R. Beal, secretary.

Chicago.

In Europe.—Dr. and Mrs. Arthur R. Elliott are taking a three months' tour of Europe.——Dr. Georgia Ruggles will remain on the Continent until September 1.

Lincoln Park Sanitarium Open.—The Lincoln Park Sanitarium for sick babies, supported by the Fresh-Air Fund, opened for the season, June 30. Last summer the sanitarium cared for 9664 babies, 9664 mothers and 43,216 children.

Warning.—A correspondent warns the profession against a man who is traveling under the name of E. J. Saunders and purports to represent a medical exchange in New York, and collects from the unwary $2 as the first payment on a share of $20 stock.

New Building for Lying-in Hospital.—The trustees of the Chicago Lying-in Hospital have completed the $10,000 building fund necessary to secure the $5000 donation of Abraham Slimmer. The plans for the new building are already being prepared.

St. Luke's Society Officials Go Free.—The grand jury voted a no-bill, July 2, in the case of the president and secretary of the St. Luke's Society. By this action of the grand jury they are relieved of all responsibility for the disastrous fire which occurred June 9, which resulted in the loss of 12 lives.

First-Aid Instruction to Northwestern Trainmen.—The surgical department of the Chicago and Northwestern Railway has inaugurated a system whereby all of the conductors, engineers, firemen and brakemen are to be posted on first-aid to the injured. These employes will each be furnished with a kit of necessary materials for dressing wounds. On each train, freight as well as passenger, large kits of simple but necessary surgical instruments, bandages, antiseptic dressings, and remedies will be placed, so that in the event of a wreck or serious accident immediate treatment can be given the injured.

The Week's Deaths.—The reports to the Health Department for the week ended July 12 show that on the estimated midyear population of 1,820,000, the 506 deaths reported represent an annual mortality of 14.48 per thousand. The principal features of the week were the large proportion of deaths among the aged and an increase of the contagious diseases of children. Fourth of July may have had something to do with the former, while it is obvious that the weather conditions are responsible for the latter. The usual seasonal increase of the diarrheal diseases is noted, and occasion is taken again to warn against the use of untreated hydrant water for drinking purposes. The heavy rains have caused frequent pollutions.

INDIANA.

Hospital Site Secured.—A site has been purchased for the new Methodist Hospital and Deaconess Home, at Capital Avenue and Sixteenth Street, Indianapolis, at a cost of $20,000.

Fines.—Dr. George L. Parr, Washington, was fined $10 on June 27 for failing to report a case of smallpox to the health authorities.——W. P. Nobes, Frankfort, pleaded guilty to a charge of practicing medicine without a license and was fined $25.

Proposed Reciprocity with Illinois.—The State Board of Medical Registration and Examination has decided to admit practitioners of Illinois to practice in Indiana if the Illinois board will give such applicants a special certificate under its seal that they have taken the examinations under the Illinois board in the subjects required by the Indiana law. The Illinois board must, however, agree to recognize applicants from Indiana under similar conditions.

Deaths and Disease During Month of June.—The reports to the State Board of Health show there were 2164 deaths in the entire state in June; this is an annual rate of 10.4 per 1000. The city deaths numbered 994, a rate of 14.1, and the country deaths numbered 1170, a rate of 8.3. The health of the country was, therefore, very decidedly better than that of the cities in June. Over one-fourth of all the deaths were of persons who were 65 years and over, the actual percentage being 25.8. It is very remarkable that the 10 deaths from diphtheria all occurred in cities, not one occurring in the country. On the other hand, all the deaths occurring from puerperal fever, 2 in number, occurred in the country, none in the cities. The typhoid death rate was less in the country than in the cities, and this was also true of cancer and of violence. The greatest number of deaths from any one disease was 253, caused by pulmonary tuberculosis. The following is the order of prevalence of diseases during June: Rheumatism, diarrhea, tonsillitis, consumption, intermittent fever bronchitis, cholera morbus, measles, cholera infantum, dysentery, typhoid fever, inflammation of bowels, pneumonia, scarlet fever, pleuritis, influenza, whooping cough, erysipelas, diphtheria and croup, puerperal fever, cerebrospinal meningitis. Diarrhea increased in area of prevalence, also cholera morbus, typhoid fever, inflammation of bowels, dysentery, cholera infantum. The diseases which decreased in area of prevalence were: Rheumatism, tonsillitis, bronchitis, measles, pneumonia, scarlet fever, pleuritis, influenza, erysipelas, puerperal fever and cerebrospinal meningitis.

MARYLAND.

Baltimore.

Deaths.—The deaths for the week ended July 12 were 283, of which three were due to sunstroke.

Northeastern Dispensary, during the quarter ended June 30, treated 4990 patients 2001 of whom were new; made 342 visits at patients' homes; had 113 patients under special treatment and filled 4997 prescriptions.

Personal.—Dr. Walter Prescott Smith, who has been dangerously ill, is reported to be improving.——Dr. R. Tunstall Taylor is taking a vacation trip through the northeastern

states and Canada.——Dr. James Bordley, Jr., has been elected clinical professor of diseases of the eye and ear in the Woman's Medical College, vice Dr. Herbert Harlan, resigned.——Dr. Nelson A. Ryan, Bowie, Prince George County, has been appointed special deputy collector of customs of this port.——Dr. C. Hampson Jones has resumed his duties as assistant health commissioner.

MICHIGAN.

New Hospital.—Architect H. T. Liebert, of Hancock, has made plans for a hospital to be built in that city for the Sisters of St. Joseph to cost $50,000.

Test Case of Medical Law.—The case of Dr. Peter Radebaugh, Sturgis, charged with violation of the medical practice act, in practicing medicine without having first obtained a license from the State Board of Medical Examiners and filing the same with the county clerk, was decided for the state, the defendant's contention that the law was unconstitutional not being considered valid. A fine of $25 was imposed. An appeal was taken at once to the Circuit Court, the object being to test the constitutionality of the law.

Comparative Morbidity.—For June, 1902, compared with the preceding month, diarrhea, typhoid fever, cholera morbus, dysentery and cholera infantum were more prevalent; and influenza, pneumonia, smallpox and meningitis were less prevalent. For June, 1902, compared with the average for June in the ten years, 1892-1901, measles, pleuritis, typhoid fever and smallpox were more than usually prevalent; and consumption, intermittent fever, erysipelas, remittent fever, cholera morbus, dysentery, cholera infantum and meningitis were less than usually prevalent.

The Most Dangerous Communicable Diseases.—Including reports by regular observers and others, meningitis was reported present in Michigan during the month of June, 1902, at 10 places; whooping cough at 43 places; diphtheria at 52 places; typhoid fever at 73 places; measles at 113 places; scarlet fever at 119 places, and consumption at 235 places. Reports from all sources show meningitis reported at 6 places less; whooping cough at 7 places more; diphtheria at 4 places less; typhoid fever at 7 places more; measles at 17 places less; scarlet fever at 23 places less; and consumption at 4 places less, than in the preceding month.

MISSOURI.

Levering Hospital Cornerstone Laid.—The cornerstone of the Levering Hospital, Hannibal, was laid, June 19, the formal ceremonies being under the charge of the local masonic fraternity.

Jewish Hospital Opened.—The new Jewish Hospital at St. Louis was dedicated, June 15. Rabbi Leon Harrison, ex-Governor Francis, Rabbi Samuel Sale, Mayor Rolla Wells and Dr. Herman Tuholske, chief of the medical staff of the hospital, made addresses. The building will now accommodate 30 patients, and 40 additional rooms will be completed and furnished in a short time.

May Practice Across the Line.—Dr. J. M. Davis, an old practitioner of Hamilton, Ill., was discharged to-day by Judge L. D. Bunch of Macon. The doctor, who has been making regular trips to towns throughout Macon county for many years, was arrested on a complaint that he had not filed a certificate from the Missouri State Board of Health authorizing him to practice. Dr. Davis admitted that he had not filed a certificate, but claimed that his forty years' practice entitled him to practice. Judge Bunch held that provisions of the physicians and surgeons' law of 1901, under which the charge was preferred, do not apply to physicians who were practicing over five years prior to the passage of the law, in 1883.

St. Louis Medical Library.—The St Louis Medical Library Association has completed its third year of existence. Beginning with nothing, it has created a modest but efficient reference library. Two rooms are filled with the conventional equipment of a library in active operation. These rooms are open for use during the afternoon and evening of each day save Sundays and legal holidays and an efficient librarian is in attendance. It has been the policy of the association to expend its limited income in the acquisition of standard current literature rather than text-books. There are now on the shelves 3482 volumes and 188 journals are received, of which two-thirds are American and one-third foreign. Of these, sixty-one have been selected as suitable material for indexing.

NEW YORK.

Cortland Hospital received about $1000, the proceeds of a concert given for its benefit, June 30.

Half a Million for Hospitals.—An appropriation of $500,000 has been made by New York City for the construction of hospitals for contagious diseases.

Convalescent Home.—Mr. John M. Burke, New York City, has given $4,000,000 for the purpose of providing a refuge for convalescents discharged from the hospitals.

Under Civil Service.—By a decision of Justice Hooker of the Supreme Court the position of physician at the Erie County Penitentiary is hereafter to be classified under the Civil Service list.

Hospital Bequests.—By the will of the late John D. Blood of Amsterdam $10,000 is bequeathed to the Amsterdam Hospital, and $1000 each to the Children's Home and the Home for Elderly Women.

Personal.—Dr. and Mrs. Smith Ely Jelliffe, New York City, sail for Europe August 15.——Dr. Juliet E. Hanchett has been appointed public vaccinator of Syracuse, vice Dr. Louise Murray, removed.——Dr. Julius Pohlman, Buffalo, has sailed for Scotland, to be gone until August 3.——Drs. Katherine Guy, Isabel Church, Sarah J. Baker, Louise Eaton and Sidonia Weiss have been appointed among the summer corps of physicians to visit the tenement houses of New York City during the hot weather.

PENNSYLVANIA.

Gift to Allentown Hospital.—John E. Lentz has given $1000 to the Allentown Hospital Association, to be the nucleus of an endowment fund for the institution.

Pittsburg General Hospital.—The Reineman Hospital Association held a meeting at the residence of Dr. J. Milton Duff, July 3, adopted a constitution and by-laws, and decided to name the new hospital, of which the Reineman Maternity Hospital is to be the nucleus, the Pittsburg General Hospital.

Staff Changes.—A new house staff, consisting of Drs. C. F. Hardy, J. B. Roberts, C. P. White, E. F. Romig, W. A. Woodburn, C. L. Curll and R. J. Beham, has assumed charge of Mercy Hospital, Pittsburg.——Dr. J. F. Glasgow has succeeded Dr. Edward Louden as senior resident physician at the Altoona Hospital, and Dr. F. A. Lockett has reported for duty as junior interne.

Addy Loses Suit.—An opinion was handed down, July 7, by Judge Stowe, in the mandamus proceedings of F. Kurtz Addy against the board of trustees of the Western Pennsylvania Medical College and others, to compel the defendants to award the plaintiff a degree of doctor of medicine. The court entered judgment for the defendants at the cost of the plaintiff. The court holds that the refusal of the trustees to approve the recommendation of the faculty that a degree be granted, was solely a matter for the trustees, unless in a case of bad faith or in violation of the principle of right and justice. Nothing of the kind is alleged in this case. Under the law, the faculty has no right to give or authorize a diploma until the same meets with the approval of the trustees. In conclusion it is not necessary to examine into the reasons given by the trustees for their refusal to grant a diploma.

Philadelphia.

Hospital Fire.—Fire broke out on the third floor of the new wing of the Municipal Hospital, July 8. By prompt work on the part of the physicians, nurses and firemen the fire was confined to the two rooms in which it started. The loss sustained is estimated at $2000.

Mortality Report.—The official report for several weeks past shows the death rate to be considerably less than for the corresponding period in most previous years. This is believed to be due to the comparative cool weather. During the week ended July 12, four deaths were attributed to sunstroke.

Personal.—Dr. William W. Keen expects to return to Philadelphia from his trip round the world and to resume active practice about September 20.——Dr. Simon D. Addis, by the breaking of his automobile, suffered dislocation of the shoulder.——Dr. H. D. Martien is reported to have suffered serious accidental poisoning at West Chester.——Dr. Charles H. Frazier is passing part of the summer at Northeast Harbor.——Dr. B. C. Platt recently returned from a trip to California.——Dr. Alice Seabrooke, who lately resigned as directress of the nurses' training school at the Methodist Hospital, has been appointed as medical superintendent of the hospital of the Woman's Medical College.

Isolation Hospital Troubles.—City councils some weeks ago took preliminary steps to purchase a portion of Petty's Island in the Delaware River for "the erection of buildings for almshouses and hospitals for the insane poor and other

municipal purposes." It is believed that among the "other municipal purposes" for which the land is to be used is for the location of the municipal hospital for contagious diseases. The land is within the jurisdiction of New Jersey, and it is understood that her citizens will use all legal means to prevent the use of the island for such purposes. More recently an ordinance was passed by councils for the purchase of Cannon Ball Farm, to be used presumably for the same purpose. The latter tract of land lies in the far southwest outskirts of the city. It is claimed by the opponents of the latter scheme that the place is too far distant from the center of population, that it is low-lying, largely covered with water much of the year, is malarial, and would be unhealthful, unfit for hospital purposes. The ordinances await the action of the mayor.

GENERAL.

Smallpox.

Illinois: Joliet is said to have eight cases of smallpox, and strict quarantine has been established.——About 18 cases of a disease said to be "smallpox, chicken-pox and varioloid" are reported from Champaign and Urbana.

Indiana: Smallpox was the most prevalent disease during June; 573 cases were reported from 52 counties. The cases numbered 692 in May, 60 counties reporting the disease present. There is therefore an improvement to record for June, as compared with the preceding month. The disease appeared in virulent form in Knightstown about June 20. Ten days later there were 35 cases in this town, 12 of them being confluent. The first case that appeared was of confluent form and the patient died. Two deaths occurred, one in Boone and the other in Henry County. One of these deaths was in Mechanicsburg, and the other in Knightstown.——Several cases are reported from French Lick.——Knightstown has had 3 deaths thus far in July.

Massachusetts: Special order 79, A. G. O., published July 6, prohibiting members of the militia who have not "successfully been vaccinated during the current year" from attending the coming encampments of the militia.

Michigan: Smallpox was reported at 121 places during June, 33 less places than in the previous month.

Ohio: The first death as a result of the smallpox epidemic now prevalent in Marion, occurred July 6. The victim was Albert Thibaut, at whose wedding celebration the disease was introduced in this city about two weeks ago. Thibaut's brother, who was sick with the disease, came here to attend the marriage and nearly seventy guests were exposed. Since that time over twenty cases have broken out, all of them traceable, directly and indirectly, to this source.

Pennsylvania: Nearly 75,000 were vaccinated in Pittsburg during June.——Philadelphia reports 18 new cases of smallpox with three deaths.

Utah: County Physician Mayo, who has charge of all contagious diseases in Salt Lake County outside of the city limits, presented his report to the County Commissioners yesterday, showing that during the month of June two new cases of smallpox had developed in his territory.

FOREIGN.

International Anti-Alcohol Congress.—The ninth international congress against the abuse of alcohol will be held at Bremen, April 14 to 19, 1903. For particulars address Dr. Delbrueck, 127 Humboldtsstrasse, Bremen.

Kolliker's Resignation.—The University of Würzburg has reluctantly accepted the resignation of Professor Albert von Kölliker, who for many years has so ably filled the chair of histology, embryology and comparative anatomy, and superintended the special institute for these branches.

Honors to De Giovanni.—The Italians celebrated, June 14, the thirtieth professional anniversary of the renowned professor at Padua, A. de Giovanni. A bronze portrait bust was presented to him, and the first public sanitarium barracks for consumptives was dedicated in his honor by the Antituberculosis League of Italy.

Deaths Abroad.—Dr. Bizarelli, member of the French Senate; F. Sommer, professor of anatomy at Griefswald; von Keczmarczki, professor of gynecology at Budapest; Professor H. Schiller of Leipsic, noted for his efforts in the line of school hygiene; Dr. Navrotzki, professor of physiology at Warsaw. The death of O. Zinsmeister is also reported from Vienna, the result of professional infection. He passed through a similar infection once before and the glands in the axilla were ablated. In operating recently on a case of osteomyelitis he infected a slight contusion on his hand, and a phlegmon developed with erysipelas, chills and fatal hematemesis the third week.

LONDON LETTER.

The King's Illness.

Universal satisfaction is felt at the uninterrupted recovery which the king is making. As he was unable to tolerate the drainage tube, gauze plugs were substituted. The wound is granulating and the discharge has diminished and is perfectly inodorous. The dressings are necessarily painful, but the king is an excellent patient. The wall of the abscess cavity is formed by coils of small intestine which have become adherent. The appendix was not found at the operation. It is now thought—as granulations are considerably organized—that all danger of septicemia or general peritonitis is passed.

The Coronation Honors.

The list of honors conferred in connection with the coronation is of particular interest to medical men, as the value of professional work is amply recognized. In the new "Order of Merit" inaugurated by the king, Lord Lister's name figures among the dozen names eminent in science, literature and war. Sir Frederick Treves, who was created K. C. V. O. in 1901, is now advanced to the rank of baronet. The boldness and sagacity with which he has attacked the problems of intestinal surgery when in its infancy have largely contributed to placing it on a sound basis. Hard work and great ability have now reaped their reward in the foremost place in British surgery. Equally successful as a teacher and an operator, equally facile with the pen and with the scalpel, he has attained an absolutely unique position. The honor of knighthood has been conferred on Mr. Victor Horsley, who also has made for himself a unique position in the surgery of the nervous system and contributed considerably to the unraveling of the problems of localization. The other recipients of this honor are Sir William Macewen, professor of surgery in the University of Glasgow, who also has become famous in the same branch of surgery, his "Surgery of the Brain and Spinal Cord" being a classic; Dr. Isambard Owen, who has done much to advance intermediate and university education in his native principality of Wales; Dr. Thomas Fraser, professor of clinical medicine in the University of Edinburgh, who discovered the myositic property of calabar bean and investigated the Kombé arrow poison strophanthus; Dr. Halliday Croom, president of the Royal College of Surgeons of Edinburgh, and a well-known writer on gynecologic and obstetric subjects; Dr. William Whitla, professor of materia medica and therapeutics in Queen's College, Belfast, and author of the most popular textbooks on these subjects; Mr. H. G. House, president of the Royal College of Surgeons of England; Mr. Thomas Myles, president of the Royal College of Surgeons of Ireland; Dr. William J. Collins; Mr. Alfred Cooper, and Mr. Conan Doyle, the well-known novelist, who is a medical graduate of the University of Edinburgh.

Army Medical Staff College.

As part of the scheme of army medical reform, which has been described in THE JOURNAL, preparations are being made to form in London a medical staff college for the Army Medical Corps. Two sets of courses will be provided, one for officers entering the service, the other an advanced course for officers approaching the time for examination for promotion. For the earlier course arrangements are about to be concluded for renting part of the laboratories of the Colleges of Physicians and Surgeons, pending the erection of permanent laboratories and a residential college. Arrangements will probably be made with some of the London medical schools for clinical work and special courses. Eventually a military hospital will be erected in London where instruction can be given in tropical disease, invaliding, recruiting and other subjects.

Steady Decline of the Smallpox Epidemic.

There are 861 cases in the metropolitan hospitals, against 1274, 1162, and 1035 in the three preceding weeks; 107 new cases were admitted in the last week against 251, 188 and 157 in the three preceding weeks.

Primary Ovarian Gestation.

At the Obstetrical Society Mr. Mayo Robson showed a specimen of primary ovarian gestation. It was taken from the only one of a series of about 50 cases of extra-uterine pregnancy operated on by him in which he had been able to prove ovarian gestation and apparently was only the fourth recorded case in which absolute proof had been furnished of the condition by showing an early embryo in its membranes contained in a sac in the ovary. The patient was a woman, aged 24, who was admitted to the hospital in a state of profound

collapse. On the previous night, six weeks after her last period and a fortnight after missing her menses, she was seized with sudden pain in the right side. She became faint and pallid and vomited. The pain continued during the night and was worse next morning. The pallor also increased. Her physician diagnosed extra-uterine pregnancy and ordered her removal to hospital. On admission she was very pale, her temperature was 98, and pulse 130, and the respirations were 48. She complained of pain on the right of the abdomen, which was distended and did not move on respiration. It was very tense and tender, rendering palpation difficult, but a fluid thrill could be obtained on flicking with the finger. No tumor could be felt. Vaginal examination showed that the uterus was fixed, and Douglas' pouch prominent. There was no history of bloody discharge from the vagina. She was put on a heated operation table and anesthetized with ether. When the peritoneum was opened there was a sudden gush of blood and clot. The right appendage was seized and clamped, as bleeding was going on, but before it could be brought to the surface the Fallopian tube, which was firmly adherent to the bottom of Douglas' pouch, had to be detached. The ovary projected above the tube, but was not adherent to it. On the top of the ovary was a firm mass surrounded by clot. On lifting this a cavity was found in the ovary into which the small ovum would easily fit. The mesometrium was transfixed and the tube and ovary were removed. The specimen is now in the Royal College of Surgeons, and is described by Mr. S. G. Shattock as follows: "The parts removed are those of an ovarian pregnancy. They comprise the fimbriated end of the right Fallopian tube, the ovary and the ovum partly surrounded by and embedded in recent blood clot. At the inner pole of the ovary is a partly collapsed cavity about three-quarters of an inch in diameter. Partly embedded in the clot lies a villous chorional sac containing an embryo 4 mm. in length." From the position of the right tube, the fimbriated extremity of which was firmly fixed in the bottom of the pouch of Douglas, leaving the ovary free above it, it seemed probable that the spermatozoa reached the ovary through the healthy tube.

Married.

WALTER C. GILDAY, M.D., to Mrs. Ella Foster, both of New York City, July 3.

A. WILBERFORCE WILLIAMS, M.D., Chicago, to Miss Tibbs of Kentucky, June 25.

PERCY V. ELLIS, M.D., to Mrs. Hallie H. Bailey, both of Ghent, Ky., June 25.

INEZ H. FORD, M.D., and Hon. William F. Nason, both of Dover, N. H., July 3.

CHARLES TRUEBLOOD, M.D., to Miss Lula Free, both of Anderson, Ind., June 25.

THOMAS H. HACK, M.D., Proctor, Vt., to Miss Josephine Burt of Detroit, Mich.

WALTER E. RICHARDSON, M.D., to Miss Fatima Whitney, both of Slayton, Minn.

CHARLES K. GIBBONS, M.D., to Miss Nellie Downing, both of Kearney, Neb., June 25.

HARRY H. LEARMONT, M.D., to Miss Nora Smith, both of Croswell, Mich., June 26.

EDWARD F. SCANLON, M.D., to Miss Mary T. Sheridan, both of Scranton, Pa., June 24.

E. C. WILLIAMS, M.D., to Miss Carrie A. Nyegaard, both of Red Rock, Texas, June 25.

ROBERT JOSEPH BURNS, M.D., to Miss Mary Agatha Cox, both of Freeport, Ill., June 25.

BURT E. SCOTT, M.D., to Miss Nina, daughter of Dr. Charles M. Willis, of Berlin, Wis., June 21.

ARTHUR MERRY JOHNSTON, M.D., to Miss Bertha Clara Frey, both of Utica, N. Y., July 16.

AUGUSTUS W. SHEA, M.D., Nashua, N. H., to Miss Lucy E. Kelley of Brooklyn, N. Y., June 25.

ALMOS H. EDWARDS, M.D., Nashville, Tenn., to Miss Louise Ricketts, of Princeton, Ky., July 9.

JAMES H. WALKER, M.D., Effingham, Ill., to Miss Aldula Sadorus of Sadorus, Ill., at Chicago.

CHARLES MACLACHLAN, M.D., surgeon-general of North Dakota, New Rockford, N. D., to Miss Etta Patterson of Wahpeton, N. D., at St. Paul, Minn., June 26.

JOHN BENNETT HERFF, M.D., San Antonio, Texas, to Miss Florence Harris of St. Louis, June 30.

F. W. BEAN, M.D., to Mrs. Hattie L. Buck, both of Bethlehem, N. H., at Lisbon, N. H., June 18.

GEORGE ANDREW CONRAD, M.D., Galien, Mich., to Miss Edith Lyle Dawe of Red Jacket, Mich., June 25.

GEORGE LAKE BLANCHARD, M.D., Craig, Neb., to Miss Kathryn Hymer of Lincoln, Neb., June 18.

WALTER BERNARD COFFEY, M.D., San Francisco, Cal., to Miss Laura E. Terry of Sacramento, Cal., July 9.

CHARLES ALFRED HAFF, M.D., Cementon, Pa., to Miss Lydia Rhodes Cummings of Media, Pa., June 26.

GEORGE W. HALE, M.D., to Miss Virginia McHenry, both of Nashville, Tenn., in New York City, July 7.

IRVING U. PARSONS, M.D., Malvern, Iowa, to Miss Minnie Williamson of Council Bluffs, Iowa, June 26.

J. CRAY MARTIN, M.D., Ashland, Ky., to Miss Katherine McAllister of Mount Sterling, Ky., June 18.

AIMEE HASKINSON, M.D., City of Mexico, and William D. Owen of Indianapolis, at Bolivar, Pa., July 4.

PHILIP KITTRIDGE TAYLOR, M.D., Kingston, to Miss Edith Forrester Pratt of Bridgewater, Mass., June 14.

FRANCIS E. O'BRIEN, M.D., to Mrs. May Electa Groat, both of Auburn, N. Y., at Jersey City, N. J., July 2.

SHERMAN HARTWELL CHAPMAN, M.D., New Haven, Conn., to Miss Helen Baldwin of Danbury, Conn., June 30.

ALBERT L. EVANS, M.D., Bonne Terre, Mo., to Miss Bernice Davis, of Desloge, Mo., at St. Louis, Mo., June 19.

SPURGEON CHEEK, M.D., Canadian, Texas, to Miss Willimetta Knollenberg of Jacksonville, Ill., June 12.

CHESTER J. HURLBURT, M.D., to Miss Mabel, daughter of Dr. Philander A. Wheeler, both of Omro, Wis., June 25.

ALLEN M. THOMPSON, M.D., to Miss Anita Vallejo Emaran, both of Sonoma, Cal., at Santa Rosa, Cal., June 17.

FRANK MUNSON STAGG, M.D., Passaic, N. J., to Miss Althea L. De Camp of Chester, Morris County, N. J., June 30.

T. BENNETT SCOTT, M.D., Owosso, Mich., to Miss Myra G. O'Dell of Nilestown, Ont., at Bay City, Mich., July 7.

WILLIAM E. SHOOCK, M.D., South Auburn, Neb., to Miss Lizzie Shurtleff of Antioch, Neb., at Humboldt, Neb., June 25.

FREDERICK J. WILKIE, M.D., health commissioner of Oshkosh, Wis., to Mrs. Ida McDonald of that city, at Menominee, Mich., June 9.

JAMES BATTELLE MCMILLAN, M.D., Somerton, Ohio, to Miss Alice Belle Lentz, at her home near Loydsville, Belmont County, Ohio, June 25.

Deaths and Obituaries.

Jerome M. Snook, M.D. University of Michigan, Ann Arbor, 1873, one of the best-known physicians in southern Michigan, died at his home in Kalamazoo, July 8, aged 57. Dr. Snook was born at East Granger, N. Y., in 1845. He was graduated from the medical department of the University of Michigan in 1873, and at once began practice in Kalamazoo. He was health officer of the city in 1887, and was division surgeon for the Michigan Central Railroad for a number of years. He was a member of the American Medical Association, of the Michigan State Medical Society, and was one of the organizers of the Kalamazoo Academy of Medicine, serving the latter organization as its president in 1889. He possessed in an exceptional degree those virtues and qualities that typify the family doctor. He was unassuming and reserved, yet no physician in the state could boast of a wider circle of genuine friends. The esteem in which he was held by his confrères is attested by the fact that more than half a hundred physicians from southern Michigan attended his funeral in a body. Memorial addresses will be made at the next regular meeting of the Academy of Medicine, September 9.

John Wichenford Washburn, M.D. Lond., 1887, F.R.C.P. Lond., 1894; F.R.C.S. Eng., 1888, died recently in London, from miliary tuberculosis, aged 39. A career of great distinction and of still greater promise has been cut short by the death of Dr. Washburn. He graduated with honors at the University of London in 1886. In 1888 he was appointed demonstrator of anatomy at Guy's Hospital, in 1889 assistant physician to the London Fever Hospital, and in 1890 assistant physician to Guy's Hospital. He was best known as a bacteriologist.

In 1890 he commenced, in association with Professor Gruber of Vienna, researches into the pathology of pneumonia, which he carried on uninterruptedly until his death, and which have rendered him famous in the scientific world. He contributed to the investigation of the life history of the pneumococcus and obtained from horses an anti-pneumonic serum of high potency. In conjunction with Dr. Goodall he produced the well-known "Manual of Infectious Diseases."

Edward N. Whittier, M.D. Harvard Medical School, 1869, died at his home in Boston, June 14, after a short illness from heart disease, aged 61. In 1873 he became a member of the staff at the Massachusetts General Hospital, a position which he held for twenty years. He was appointed in 1877 as instructor in clinical medicine at Harvard Medical School. Four years later he was made instructor in practice of medicine, and in 1884 was made assistant professor in clinical medicine, a position which he retained until 1888, when he resigned. Since then he has continued in active practice, his services being in especial demand as a consultant.

John T. Winter, M.D. University of Georgetown, D. C., 1870, died at his home in Washington, D. C., June 22, from paralysis, after an illness of several weeks, aged 60. He was one of the founders of the National University Medical School, and was a member of the executive staff of several of the local hospitals. He took great interest in pharmacy, and at the time of his death was president of the Board of Commissioners of Pharmacy of the District. He was a member of the American Medical Association, the District Medical Association, the District Medical Society, etc.

Alexander Mecray, M.D. University of Pennsylvania, Philadelphia, 1864, until three years ago an active practitioner of Camden, N. J., died, June 26, at his home in Maple Shade, N. J., from apoplexy, aged 63. He was a member of the Camden city and county medical societies, and of the State Medical Society. He was at one time president of the County Medical Society, and also served for a long term of years as its treasurer.

William S. Leonard, M.D. Dartmouth Medical College, Hanover, N. H., 1860, a universally beloved and respected physician of the Ashuelot Valley, died at his home in Hinsdale, N. H., June 14, after a short illness, aged 69. He was a member of the New Hampshire Medical Society, and in 1887 delivered the doctorate address of the commencement exercises of Dartmouth Medical College.

Orrin Porter McDonald, M.D. College of Physicians and Surgeons, New York, 1860, a leading medical man of eastern Iowa for many years, died at his home in Keokuk, June 21, from chronic enlargement of the liver and spleen, after a relatively short illness, aged 68. The physicians of Keokuk, at a special meeting held June 25, passed resolutions of regret and esteem.

Hallock Rathbone Maine, M.D. College of Physicians and Surgeons, New York City, 1888, a member of the Kings County Medical Society, of the Medical Society of Greater New York, the Physicians' Mutual Aid Association, and of the Alumni Association of the Kings County Hospital, died at his home in Brooklyn, from pneumonia, June 13, aged 37.

Marshall Perkins, M.D. Harvard Medical School, 1850, for more than fifty years a practitioner in New Hampshire, died at his home in Marlow, June 11, from pulmonary edema, aged 79. He served for three years during the Civil war as assistant surgeon of the Fourteenth New Hampshire Volunteer Infantry.

Robert A. Work, M.D. Jefferson Medical College, Philadelphia, 1892, died at his home in Bethlehem, June 17, after an operation for appendicitis, aged 34. After his graduation he served as interne in the Wills Eye Hospital, Philadelphia, and afterward made a specialty of diseases of the eye, nose and throat.

George Edward Tyler, M.D. Long Island College Hospital, Brooklyn, N. Y., 1896, secretary of the Colorado State Board of Health, and a member of the American Medical Association, died at his home in Denver, July 7, from pneumonia complicating typhoid fever, after an illness of two weeks, aged 33.

Arthur Ward, M.D. College of Physicians and Surgeons, New York City, 1847, the oldest physician of Newark, N. J., where he had practiced for five years, and a member of the American Medical Association, died at his home in Newark, after an illness of three months, aged 89.

Charles T. Taliaferro, M.D. Atlanta (Ga.) Medical College, 1859, one of the oldest practitioners in Conecuh County, Ala., died at his home in Evergreen, June 20, from brain disease, aged 68. He served throughout the Civil war as a surgeon in the Confederate service.

Obed L. Lusk, M.D. Northwestern University Medical School, Chicago, 1882, health officer of Hempstead, L. I., and assistant sanitary superintendent for Queen's Borough, died suddenly from Bright's disease, at his home in Rockaway Beach, N. Y., June 20, aged 42.

J. Wilson Wishart, M.D. University of Pennsylvania, Philadelphia, 1851, surgeon of the One Hundred and Fortieth Pennsylvania Volunteer Infantry in the Civil war, and thereafter a practitioner of Pittsburg, died at his home in East End, June 21, aged 73.

Henry E. Hunter, M.D. Western Reserve University, Cleveland, Ohio, 1869, a member of the Des Moines Valley Medical Association and the Jasper County Medical Society, died at his home in Newton, Iowa, June 19, after an illness of two months, aged 71.

Carl A. W. Zimmermann, M.D. University of Würzburg, Germany, 1868, for thirty-five years a resident of Quincy, Ill., but since 1900 a practitioner of St. Louis, died at his home in that city, June 30, from angina pectoris, after an illness of one week, aged 49.

Stephen C. Russell, M.D. University of Louisiana, New Orleans, 1848, secretary of the Louisiana State Board of Health for several years, and an authority on yellow fever and sanitation, died at his home in New Orleans, June 12, aged 83.

Henry Dexter Wheeler, M.D. Long Island College Hospital, Brooklyn, N. Y., 1894, while suffering from melancholia, died, June 12, from the effect of a self-inflicted gunshot wound of the head, at his office in King Ferry, N. Y., aged 29.

Alden Hitch Steele, M.D. New York University, 1846, for more than thirty years a practitioner of Thurston County, Wash., died at his home in Olympia, June 30, after an illness of fifteen years, from locomotor ataxia, aged 79.

William J. Ross, M.D. Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., 1900, committed suicide, June 27, by taking hydrocyanic acid at his home in Onaway, Mich.

William McClelland, M.D. Jefferson Medical College, Philadelphia, 1843, a pioneer physician of southeastern Iowa, died at his home in Washington, from paralysis, June 10, after an illness of three weeks, aged 88.

Frederick W. Thum, M.D. College of Physicians and Surgeons, New York, 1891, died at his home in Newark, N. J., June 27, from sepsis, due to an operation wound, after an illness of two weeks, aged 37.

Hubert F. Praeger, M.D. Jefferson Medical College, Philadelphia, 1878, a widely-known physician of Brooklyn, N. Y., died suddenly at his home in that city, June 22, from heart disease, aged 52.

Wilson Pottinger, M.D. Indiana Medical College, La Porte, surgeon of the Seventy-third Indiana Volunteer Infantry in the Civil war, died recently at Kankakee, Ill., aged 81.

James Quertermous, M.D. Kentucky School of Medicine, Louisville, 1864, a surgeon in the Federal army in the Civil war, died at his home in Clay City, Ill., July 7, aged 61.

Edward H. Samuels, M.D. Cooper Medical College, San Francisco, Cal., 1890, died from tuberculosis after an illness of a year, June 15, at his home in Mayfield, Cal., aged 32.

Bernard P. Ryce, M.D. Bellevue Hospital Medical College, New York, 1890, died at his home in Meriden, Conn., July 5, from tuberculosis, after an illness of one year, aged 40.

William M. Simcox, M.D. Jefferson Medical College, Canonsburg, Pa., who had practiced for 55 years in West End, Pittsburg, died at his home in that city, June 30, aged 76.

William T. Hutcheson, M.D. Washington University, St. Louis, 1880, a practitioner of Crocker, Mo., died at the residence of his daughter in Waynesville, Mo., June 14.

William J. McDaniels, M.D. Jefferson Medical College, Philadelphia, 1883, a prominent physician of Portland, Ore., was run over and killed by an electric car, June 13.

Edward H. Kinney, M.D. Bellevue Hospital Medical College, 1883, of Humboldt, Iowa, died at a hospital in Minneapolis, Minn., from septic meningitis, June 30.

Ernest Potter Jenks, M.D. College of Physicians and Surgeons, New York, 1893, died from Bright's disease at his home in New York City, June 25, aged 36.

E. N. Woodworth, M.D. College of Physicians and Surgeons, Keckuk, Iowa, 1870, formerly a practitioner of Peoria, died recently at his home in La Mar, Mo.

Lewis M. V. Wright, M.D. Meharry Medical College, Nashville, Tenn., 1890, died at his home in Cynthiana, Ky., June 14, from consumption, aged 38.

C. M. Van Syckle, M.D. Baltimore Medical College, 1901, died at his home in Brooklyn, N. Y., May 13, after a short illness, from typhoid fever, aged 23.

Harry W. Koppelberger, M.D. Hamline University, Minneapolis, 1897, died from consumption, at his home in Wheaton, Minn., June 10, aged 31.

Robert E. McCandless, M.D. Kansas Medical College, Topeka, 1897, of Perry, Okla., died suddenly, July 7, at Wilburton, I. T., from heart disease.

Arthur P. Prioleau, M.D. Medical College of the State of South Carolina, Charleston, 1876, died from heart disease after a short illness, June 21, aged 48.

M. R. Stewart, M.D. Southern Medical College, Atlanta, Ga., 1890, died at his home in Conyers, Ga., June 15, after a brief illness, aged 47.

George M. Macklin, M.D. Rush Medical College, Chicago, 1871, died at his home in Waterman, Ill., June 10, from Bright's disease.

Jesse B. Lucas, M.D. College of Physicians and Surgeons, Baltimore, 1881, died at his home in Ochlochnee, Ga., June 12, aged 46.

Ezra F. McCammon, M.D. Kentucky School of Medicine, Louisville, 1869, died at his home in Pine Bluff, Ark., June 8, aged 75.

James Macauley, M.D. Edinburgh and Paris, for 10 years editor of the *Literary Gazette*, died in London, June 19, aged 85.

Robert E. Moore, M.D. University of Nashville (Tenn.), 1868, died at his home in Orlinda, Tenn., June 15, after a short illness.

W. A. Morris, M.D., one of the oldest physicians of Austin, Texas, died at his home in that city, June 12, aged 90.

Albanus Styer, M.D. Jefferson Medical College, Philadelphia, 1849, died at his home in Ambler, Pa., July 3, aged 75.

John B. Hartwell, M.D. Albany (N. Y.) Medical College, 1856, died, June 23, at his home in Woodmere, N. Y.

John H. Kimball, M.D. Harvard Medical School, Boston, 1857, died recently at his home in Bridgton, Me.

George W. Jones, M.D., of Richmond, Va., died, June 26, at his home in that city.

State Boards of Registration.

Wisconsin Election.—The annual meeting of the Wisconsin board was held at Madison, July 8 and 9, and 60 candidates examined. Dr. J. R. Currens, Two Rivers, and Dr. Filip A. Forsbeck, Milwaukee, were re-elected president and secretary.

The July examinations have been in progress in many states. The number of candidates is large, including the recent medical graduates in many states which do not allow undergraduates to come before their boards until diplomas are really in the hands of the applicants.

In Seattle, Wash., a jury has pronounced Dr. James G. Stewart, a regular physician of that city, and O. V. Lawson, an applicant for license from the board of registration, guilty of conspiracy to defraud. Dr. Stewart agreed to furnish in advance the questions for the medical examination; he gave Lawson an old set, and Lawson then exposed Stewart and arrest followed.

The Indiana Board of Registration has decided to omit from the blanks sent to applicants for license the question: "With what school of medicine do you desire to be classed?" and will omit classification in the annual report. All who are licensed will be considered simply practicing physicians. The board is composed of one homeopath, one eclectic, one physio-medical and two regulars.

Washington Board Elects.—The State Board of Medical Examiners met at Spokane, July 1 and 2, and elected Dr. C. E. Grove, Spokane, president; Dr. W. C. Cox, Everett, vice-president; Dr. P. B. Swearingen, Tacoma, secretary, and Dr. J. H. Hoxsey, Spangle, treasurer. Physicians coming into the state have been allowed to practice until the next meeting of the board following their arrival, but this is to be stopped and no practice allowed until after examination is passed.

West Virginia.—The spring session of the Board of Health of West Virginia was held in the city of Parkersburg, April 29 and 30 and May 1. An unusually large class appeared for examination for license to practice medicine, of which 10 failed and 60 were granted certificates. The qualifications of the class were above the average, as usually the percentage of failures is much larger. The next session of the board will be held at Terra Alta, July 16 and 18.

The Minnesota board, at St. Paul, June 3, 4 and 6 examined 115 applicants, of whom 94 attained a percentage of 75, 19 failed and 2 fell by the wayside. There were 12 subjects and 105 written questions. Dr. C. J. Ringnell, Minneapolis, secretary of the board, favors us with the following detailed statement:

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
1971	R.	University of Minnesota	1902	79.7
1972	R.	University of Minnesota	1902	79.5
1973	R.	University of Minnesota	1902	87.7
1974	R.	University of Minnesota	1902	91.4
1975	R.	University of Minnesota	1902	84.2
1976	R.	University of Minnesota	1902	82.6
1977	R.	University of Minnesota	1902	86.8
1978	R.	University of Minnesota	1902	92.0
1979	R.	University of Minnesota	1902	85.1
1980	R.	University of Minnesota	1902	78.6
1982	R.	University of Minnesota	1902	88.2
1983	R.	University of Minnesota	1902	82.9
1984	R.	University of Minnesota	1902	87.5
1986	R.	University of Minnesota	1902	81.8
1988	R.	University of Minnesota	1902	83.8
1989	R.	University of Minnesota	1902	77.8
1990	R.	University of Minnesota	1902	88.7
1991	R.	University of Minnesota	1902	85.6
1992	R.	University of Minnesota	1902	81.9
1993	R.	University of Minnesota	1902	88.5
1994	R.	University of Minnesota	1902	84.9
1995	R.	University of Minnesota	1902	75.5
1996	R.	University of Minnesota	1902	77.5
1997	R.	University of Minnesota	1902	79.2
1998	R.	University of Minnesota	1902	82.2
1999	R.	University of Minnesota	1902	80.0
2000	R.	University of Minnesota	1902	86.6
2001	R.	University of Minnesota	1902	85.3
2002	R.	University of Minnesota	1902	83.2
2003	R.	University of Minnesota	1902	82.2
2004	R.	University of Minnesota	1902	77.9
2006	R.	University of Minnesota	1902	78.4
2007	R.	University of Minnesota	1902	77.9
2008	R.	University of Minnesota	1902	78.1
2011	R.	University of Minnesota	1902	76.5
2012	R.	University of Minnesota	1902	83.6
2013	R.	University of Minnesota	1902	85.6
2014	R.	University of Minnesota	1902	83.7
2015	R.	University of Minnesota	1902	86.3
2016	R.	University of Minnesota	1902	82.3
2017	R.	University of Minnesota	1902	89.7
2018	R.	University of Minnesota	1902	87.4
2019	R.	University of Minnesota	1902	85.9
2021	R.	University of Minnesota	1902	80.6
2022	R.	University of Minnesota	1902	79.5
2023	R.	University of Minnesota	1902	79.0
2024	R.	University of Minnesota	1902	79.5
2025	R.	University of Minnesota	1902	80.8
2026	R.	University of Minnesota	1902	82.9
2027	R.	University of Minnesota	1902	78.5
2028	R.	University of Minnesota	1902	77.1
2029	R.	University of Minnesota	1902	80.1
2030	R.	University of Minnesota	1902	80.7
2031	R.	University of Minnesota	1902	78.1
2068	H.	University of Minnesota	1902	75.0
2069	R.	University of Minnesota	1902	85.7
2070	H.	University of Minnesota	1902	85.7
2080	R.	University of Minnesota	1902	84.6
2052	R.	Hamline University, Minneapolis	1902	87.6
2054	R.	Hamline University, Minneapolis	1902	78.6
2033	R.	Hamline University, Minneapolis	1902	82.0
2034	R.	Hamline University, Minneapolis	1902	77.3
2035	R.	Hamline University, Minneapolis	1902	75.0
2039	R.	Hamline University, Minneapolis	1902	82.4
2044	R.	Hamline University, Minneapolis	1902	82.0
2045	R.	Hamline University, Minneapolis	1902	80.8
2046	R.	Hamline University, Minneapolis	1902	83.7
2047	R.	Hamline University, Minneapolis	1902	87.7
2048	R.	Hamline University, Minneapolis	1902	83.4
2049	R.	Hamline University, Minneapolis	1902	82.5
2051	R.	Hamline University, Minneapolis	1902	87.1
2060	R.	Hamline University, Minneapolis	1902	85.6
2066	R.	Hamline University, Minneapolis	1902	78.5
2084	R.	Sioux City Medical College	1902	79.6
2055	R.	Rush Medical College, Chicago	1902	86.5
2056	R.	Rush Medical College, Chicago	1902	84.4
2057	R.	Rush Medical College, Chicago	1902	83.8
2058	R.	Rush Medical College, Chicago	1895	75.6
2059	R.	University of Michigan	1886	86.1
2038	R.	Northwestern University, Chicago	1902	80.5
2067	R.	Northwestern University, Chicago	1902	87.0
2036	H.	Chicago Homeo. Medical College	1902	78.2
2037	R.	College of Phys. and Surgs., Chicago	1902	78.9
2062	R.	College of Phys. and Surgs., Chicago	1902	86.2
2063	R.	College of Phys. and Surgs., Chicago	1902	83.8

Candidate.	Sch. of Pract.	College.	Year Grad.	Percent.
		PASSED.		
2041	R.	College of Phys. and Surgs., Chicago	1902	78.4
2042	R.	University of Michigan	1902	87.4
2043	R.	University of Baltimore, Md.	1902	78.1
1981	H.	Hahnemann Medical College, Chicago	1901	85.2
2071	R.	Physicians and Surgeons, Wisconsin	1902	81.1
2072	R.	University of the South, Tennessee	1900	78.6
2073	R.	University of Pennsylvania	1893	82.8
2064	R.	College of Phys. and Surgs., Keokuk	1902	78.6
2065	R.	College of Phys. and Surgs., Keokuk	1902	78.4
		FAILED.		
2079	R.	University of Minnesota	†*	76.6
2009	R.	University of Minnesota	†*	77.2
2010	R.	University of Minnesota	†*	77.8
2020	R.	University of Minnesota	*	74.5
1985	R.	University of Minnesota	(?)	71.6
1987	R.	University of Minnesota	†*	77.1
2005	R.	University of Maryland	1902	73.9
2083	R.	Hamline University, Minneapolis	1902	70.5
2040	R.	Hamline University, Minneapolis	1896	73.1
2050	R.	Hamline University, Minneapolis	1902	74.1
2053	R.	Hamline University, Minneapolis	1902	72.0
2085	H.	Hahnemann Medical College, Chicago	1897	50.7
2081	H.	Hahnemann Medical College, Phila	1902	72.6
2082	R.	University of Michigan	1877	63.2
2074	R.	University of Kansas	1899	67.7
2075	R.	College of Phys. and Surgs., Chicago	1902	73.5
2076	R.	College of Phys. and Surgs., Chicago	1902	74.6
2077	R.	College of Phys. and Surgs., Chicago	1902	69.9
2078	R.	College of Phys. and Surgs., Chicago	1902	68.4

* Undergraduate.

† Was refused license because unqualified to take the examination.

Queries and Minor Notes.

QUESTIONS OF ETHICS.

To the Editor:—During a little controversy recently, the following questions came up and the matter is referred to you for decision:

CASE 1.—Dr. A. had a little patient with chronic trouble. Dr. B. was called in consultation. Patient grew some better. A few months later became worse. Dr. A.'s visits were not received kindly by patient. The father asked him on that account to discontinue them. Dr. B. was sent for, but was absent from town, attending some meeting or convention. Dr. C. was then called. A few days later Dr. B. returned. He and patient's father incidentally meeting in street, the father told him he had called for him, but being absent had called Dr. C., but expressed no intention of changing. Dr. B. calls on Dr. C., states the conversation, and practically demands the case to be turned over to him. Dr. C. refused, but agrees to abide by decision of father, who wished Dr. C. to stay with the case.

Query.—Had Dr. B. the right to demand patient from Dr. C. when he (Dr. B.) was not the family physician? Is it customary for physicians to care for competitor's practice in his absence, when not requested, and on return of absent brother, turn over said practice to him—except in the instances where he is the family physician?

CASE 2.—Dr. A. had a call to visit Mrs. Blank; being absent from home, Dr. B. was called in. About a week later Dr. A. was called in consultation with Dr. B. Patient died.

Dr. B., assisted by Dr. A. and undertaker, held postmortem next day. At close of postmortem, Dr. B. suggested that Mr. Blank might want to see conditions found. Dr. A., whose hands were free, offered to carry message.

The friends were found in the kitchen—two rooms distant from the one in which autopsy was held. Dr. A. inquired for Mr. Blank. A friend said he was at the barn, and sent a little boy to call him. Dr. A. remained in the room, expecting the prompt return of husband. Some minutes elapsed, however, and while thus waiting, one of the friends made inquiry as to the conditions found. Dr. A explained, making a draft on margin of newspaper to illustrate. Some minutes later Mr. Blank came and Dr. A. delivered message and hastened back to report.

Query.—Was Dr. A. guilty of discourtesy toward Dr. B. in not referring inquiring friend to him for information, since he had been in the case with Dr. B.?

•— •— •—.

July 10, 1902.

ANS.—As regards the first case, we see no reason why Dr. B. should necessarily succeed Dr. A. in the management of the case. In any event the wishes of the parent should rule. As regards the second case, we take it for granted that there is nothing involving the question of privileged communication. In a general way it would be better to reserve the reports of autopsies for those most interested and entitled to know the facts. Still, there may be no special impropriety in the course followed by Dr. A. under the circumstances which are not completely given. If no discourtesy was meant none should be understood.

PRACTICE IN CUBA, PORTO RICO AND MEXICO.

BLOOMFIELD, MO., July 7, 1902.

To the Editor:—Will you kindly inform me through your columns of the laws governing the practice of medicine in Cuba, Porto Rico and Mexico? D. R. C.

ANS.—A full account of the requirements was published in THE JOURNAL of Dec. 23, 1899, which is probably accessible to the reader. The question was also answered in THE JOURNAL, Vol. xxxvii, p. 1713. It seems that there must be elaborate identification of the diploma before it entitles the holder to be examined at the National University, City of Mexico. We presume examinations are required in most if not all of the states of the Republic, and certainly in the Capital, and are severe and in the Spanish language. A thesis in Spanish is also required. We do not know what will be required under the present government of Cuba, but under the military government examination by a committee of professors of the University of Havana was required. As to requirements in Porto Rico the inquirer is referred to Dr. W. F. Smith, Secretary of the Superior Council of Health, San Juan. An examination will probably be also required there, though it can be waived at the discretion of the council.

DEATH OF EMIL HOLUB.

TAYLOR, TEX., July 12, 1902.

To the Editor:—In the last issue of your paper, I observe the statement that Dr. Emil Holub, the noted African explorer, is not dead, as stated in THE JOURNAL some weeks ago. I take the liberty to inform you that Dr. Emil Holub died Feb. 21, 1902, at 8:45 p. m., at his home in Vienna. He died from the effects of pernicious malaria, complicated by erythema nodosum and interstitial nephritis. The direct cause of his death was uremia.

Yours truly, F. C. FLOECKINGER, M.D.

GOAT LYMPH.

CHICAGO, July 11, 1902.

To the Editor:—Please answer through THE JOURNAL the following: Is the Roberts-Hawley Lymph Compound of any value? What is the opinion of the best posted men? W. L. B.

ANS.—The Roberts-Hawley Lymph is a proprietary preparation exploited in a way we do not approve. Moreover, as said once before, we do not advertise it because we have no faith in it.

IS THERE AFEBRILE TYPHOID?

CHELSEA, IND., July 12, 1902.

To the Editor:—Can there exist a genuine case of typhoid with the temperature normal or below normal? I would like to hear the views of the editor and other members of the profession.

H. A. G.

ANS.—Good authorities, like Anders, Musser, and others, say there are cases of typhoid without rise of temperature, but that such are very rare.

Correspondence.

West Virginia Society in Line.

ELKINS, W. VA., July 14, 1902.

To the Editor:—In enumerating in your last two issues the states which have adopted constitutions and by-laws patterned after those proposed by the American Medical Association you have omitted to include among them the State of West Virginia. Fraternally yours, WM. W. GOLDEN, Secretary.

NOTE.—In THE JOURNAL of June 14, 1902, page 1590, we credited West Virginia with adopting "by unanimous vote" a constitution and by-laws "in entire conformity" with the plan of the American Medical Association, and we regret to have omitted the state in the editorials to which Dr. Golden refers. West Virginia is in line.

What is Accounted Successful Vaccination?

COLUMBUS, OHIO, July 9, 1902.

To the Editor:—This subject is considered under the Medicolegal Department of THE JOURNAL, July 5, 1902. It is an important question, and in my opinion the decision is unjust and incorrect.

Successful vaccination is the inoculation of a person with the virus of cow-pox to such an extent that he is for an indefinite period of time rendered immune from variola. This is the only tenable definition for any physician who believes in the one great specific prophylactic measure which we possess. On the decision of this point depends much of the result of the contest between the anti-vaccinationists and those who believe that variola can ultimately be stamped out by vaccination.

The particular case in question can not be discussed, for we do not know how long before exposure the person was vaccinated; nor do we know the facts on which the testifying physician based his testimony.

In lieu of this information, I will briefly discuss a case which came to my knowledge. A medical student desired to

visit a smallpox hospital. He had never been vaccinated, and so took this precaution before making the visit. Not only was the local lesion typical, but most intense general symptoms developed, with high temperature and eruption. Shortly after recovery the visit to the hospital was made and an autopsy was performed on a body dead of variola. Within two weeks he developed a most virulent form of confluent variola, recovery followed, though life and death hung in the balance for a day or two.

Was this student successfully vaccinated? Most emphatically no, for the object of vaccination was not attained. Did the vaccination do any good? We can only surmise; without it I fear that death would have been on the lower side of the balance.

Our lack of facts regarding immunity leaves us at liberty to draw various conclusions from this case. However, I believe that we are justified in assuming that he was an extremely susceptible subject. I believe that revaccination should have been practiced immediately on recovery from the vaccinia, and revaccination should have been continued until no reaction, either general or local, resulted.

This brings me to my ultimate conclusion and object. Vaccination should be repeated until no reaction, either general or local, results, with the use of an absolutely reliable virus and herein lies the only true test of "successful vaccination."

H. C. CRUMRINE, M.D.

Opposes Making Dentists Semi-Physicians.

CHICAGO, ILL., June 21, 1902.

To the Editor:—Dr. Peck's plan to teach physical diagnosis to dentists seems to me a highly superfluous one. To gradually make the 40,000 dentists in this country semi-doctors is to add to the already much overcrowded medical profession an additional burden. The doctor seems to forget that a man who is not licensed to practice medicine has no business to do so, and if making a physical diagnosis and then advising the patient along such lines is not practice of medicine, what is it? He forgets, too, that while the dentist in such instances gets remunerated for his part of the work the doctor is thrown out of his legitimate fee. Nearly every patient who goes to a dentist is the patient of some physician, and it would be the height of discourtesy, to say nothing of the lack of necessity in 99/100 of the cases, to request a physical examination before proceeding with the dental work. A dentist who has ordinary intelligence and judgment will not keep a nervous woman in a chair for a long sitting, and if he can not discover her condition from casual observation he certainly can not from an unwelcome physical examination. Dentists have got along very well under the present conditions. We do not hear of any dire calamities befalling any of their patients. If dental professors will instruct their pupils to be careful, to not want to get the work done too quickly for the money there is in it, they will eliminate all necessity for unusual refinements. So far as embarrassment to the dentist is concerned there could be none, as no patient expects him to do what he has no pretensions to. When ether or chloroform is required he refers the patient to his physician, who looks after all such details, relieving him—and properly—of all responsibility. Many dentists now prescribe for patients, thinking they know more than a physician. Dr. Peck might, with equal force, suggest that symptomatology and pathology be added to the curricula of pharmacy schools that pharmacists might judge of the adaptability of prescriptions to the patients for whom they are asked to fill them. What with the hypermultiplicity of medical schools, free dispensaries, prescribing druggists, midwives and faith healers, the regular physician has a hard road to travel without adding further to his burdens. Dr. Peck, no doubt, has found his medical knowledge useful, and if he insists that dentists should have it let him likewise insist that they should take the medical degree. Physicians might as well have dentistry added to their curricula as the reverse proposition. How would the dentists like that? The doctor may say that I am looking at it from a selfishly pecuniary standpoint rather than a high scientific one. This may be true to an extent, and I find justification in the trite but true saying that "self-preservation is the first law of Nature." The enemies of the medical profession are not the wholesale pharmaceutical houses, as many would have us believe, but are in the ranks of the profession itself, who, in their own selfish desire for success, start all kinds of medical schools which graduate all kinds of students, irrespective of their moral, physical or mental qualifications. They get the poor devil's money; in return the poor devil, who has to make a living, finds he can not do it legitimately, so turns quack. No, we do not need more doctors nor half doctors. We need a profession whose leaders are ethical, not only in tongue but in acts. If they are sincere let these leaders subvert self, make one medical school out of three, instead of getting jealous of each other and making three out of one. Let them tell a prospective student that he has less chance to succeed in medicine than he has to win money at a horse race instead of evasively remarking "there is always room at the top." These latter observations are a little apart from my criticism of Dr. Peck's paper, but still, I think, are apropos.

H. E. DUNLOP, M.D.

390 N. Clark Street.

Osteopaths Must Take the Usual Examination—Alabama Supreme Court Decision.

MONTGOMERY, ALA., July 2, 1902.

To the Editor:—Knowing the interest of THE JOURNAL of the American Medical Association in all questions involving the practice of medicine, I send you a copy of a decision just rendered by the Alabama Supreme Court, the highest tribunal of the state, in a case which was appealed to that body last November. The decision is of great importance to the profession in Alabama, and in my judgment is of interest to the profession at large. To me it seems to present a "clear-cut" argument as to what constitutes the practice of medicine. I am told by members of the legal profession that the Alabama Supreme Court occupies a high judicial rank, and I feel sure its position will not suffer from this decision, which was prepared by Judge J. R. Tyson, and unanimously concurred in by the other members of the court. If you think it or any part of it is worthy a place in your valuable journal you are at liberty to use same. I am very respectfully,

R. S. HILL.

THE SUPREME COURT OF ALABAMA.

NOVEMBER TERM, 1901, 6 DIV., 479. E. EUGENE BRAGG VS. THE STATE OF ALABAMA. APPEAL FROM JEFFERSON CRIMINAL COURT. JUDGE: J. R. TYSON.

It is admitted that defendant was engaged in the practice of osteopathy as a profession and means of livelihood without having obtained a certificate of qualification from one of the authorized boards of medical examiners.

The most important question presented is whether the practice of osteopathy is "the practice of medicine in any of its branches or departments" within the meaning of Section 3261 of Civil Code and 5333 of Criminal Code. The contention of defendant is, that it is not. He predicates his insistence mainly, indeed we may say wholly, upon the fact that in the practice of osteopathy no drugs or other medicinal substances are administered or applied, internally or externally; nor is the knife used or any form of surgery resorted to in the treatment of diseases. In fact, the practitioners of that school of the healing art repudiate as remedial agents, all drugs, medicinal substances and the knife and other surgical instruments and appliances, in the treatment of or alleviation of diseases and therefore need have no knowledge of their use. They, of consequence, know nothing of the medicinal properties of drugs and other medicinal substances or of the compounding and administering of drugs in the cure of diseases. Their method of treatment is entirely external, consisting of "a system of a manipulation of the limbs and body of the patient with the hands, by kneading, rubbing or pressing upon the parts of the body." However, in order to practice the profession of osteopathy skilfully and scientifically, it is admitted that the practitioner must know anatomy, physiology, hygiene, histology and pathology. Confessedly, the requirement of a knowledge on the part of the practitioners of all of these branches of the science of healing the sick or diseased is to enable him to skilfully determine the disease with which his patient is afflicted and to aid him in making a proper application of his system of manipulation. For it is entirely clear from the evidence that the practitioner does not make the same application of his remedy to all diseases, but that he applies such system of manipulation as is most remedial in alleviating or curing the particular disease he is called upon to treat. In other words, after a diagnosis of the disease of the patient, he applies the remedy most suitable to its cure, confining it, however, to his system of manipulation as a remedial agent.

So, too, a practitioner of medicine is required to know anatomy, physiology, hygiene, histology, and pathology in order to enable him to skilfully and scientifically determine from what disease his patient is suffering, and after so determining, he must also know

how and what remedial agents should be prescribed for the alleviation or cure of the disease. So, after all, the only difference between the two is in the matter of therapeutics—that branch of medical science which considers the application of remedies as a means of cure. The former, as we have shown, applies his external remedies exclusively, while the latter prescribes internal or external, or both, as the exigencies of the case may require. The result sought to be accomplished by each is the same—to relieve the patient's illness—to cure him. Both are practicing the art of healing or curing human diseases.

But it is said the words "the practice of medicine" or "who practices medicine" as used in the statutes, should not be extended to all practitioners of the art or science of healing or curing diseases, but that their proper interpretation or construction includes only those persons who employ medical substances or drugs as remedial agents for the alleviation or healing of diseases. This contention is based upon the proposition that the word medicine in its popular sense and as commonly understood is a remedial substance or drug; and that the practice of medicine as popularly understood inseparably includes as its great and overruling constituent the administration of drugs and other medicinal substances as remedial agents. Indeed, the whole superstructure of defendant's theory that as a practitioner of osteopathy he is not engaged in the practice of medicine has for its foundation that the interpretation of the words "medicine or practice of medicine" must be accepted in the sense in which these words are commonly used. With this foundation or base destroyed his theory must fall. In other words, if his premise is shown to be fallacious, of necessity his conclusion must be false. So then, the question is, what is the correct rule of interpretation of these words? Shall we interpret them in their popular sense or as commonly understood, or are they to be interpreted, being technical words, used in reference to a technical subject, according to the meaning or use they have when applied to the particular art or science with reference to which they are used? It can not be well doubted that if they are technical words having a technical meaning when applied to the particular art or science to which they refer, that such use or meaning must be given to them, unless, from the context of the statutes, a different use or meaning is made apparent.—17 Am. & Eng. Ency. Law (2d ed.), 13; 23 Am. & Eng. Ency. Law (1st ed.), 324. This rule is stated by Mr. Erdlich in his work on the Interpretation of Statutes (Sections 73, 74 and 75, pp. 94, 95 and 96) to be that "the words of a statute are to be understood in the sense in which they best harmonize with the subject of the enactment and the object which the legislature has in view. Their meaning is found not so much in a strictly grammatical or etymological propriety of language, nor even in its popular use, as in the subject or in the occasion on which they are used, and the objects to be attained. That is, in the construction of a statute, as in that of other instruments, words are to be understood, not according to their mere ordinary general meanings, but according to their ordinary meaning as applied to the subject-matter with regard to which they are used, unless, indeed, there be something requiring them to be read in a sense which is not their ordinary sense in the English language as so applied. * * * An obvious result of this rule is, that where technical words are used in reference to a technical subject, they are primarily interpreted in the sense in which they are understood in the science, art or business in which they have acquired it." After showing the application of the rule in the construction of words and phrases having legal technical meanings, the author continues by saying: "But the rule giving to a word its technical meaning holds equally good in the construction of statutes dealing with other subjects as to which words and phrases used in a statute have acquired such a meaning, whether it be a legal technical meaning or not; i. e., whether it be a technical meaning which the word or phrase has acquired in the law, or a technical meaning which it has acquired in any other science, art, or business, If the enactment relates to any of these, the technical meaning the word has in the law, in any other science, in any art, or in any business is to be given to it, accordingly as the one or the other is the subject of the enactment."

It will not be doubted that the word "medicine," however, whenever and wherever used, has reference to the subject of a science or art—a technical word denoting the science or art of curing diseases; and that one who engages in the practice of it is a scientist or artist, professionally known by the name of "physician" or "doctor." It may be, and doubtless is true, that it is not and has never been an exact science, but this is due to the fact that it has been and is a progressive science—but it is nevertheless a science or art. Nor does the fact that those who practice the science or art differ as to the administration of specific remedies for specific diseases render it any the less an art or science. These differences have always existed and will, doubtless, always continue to exist.

The word medicine (Latin, *medicina*) is derived from *medeor*—to heal. It is defined by the eminent lexicographer of medical words or terms, Gould, to be: "The science and art of preserving health, and preventing and curing disease; the 'healing art,' including also the science of obstetrics." By Dunglison, another author of a medical dictionary, to be: "The healing art: physic. A science the object of which is the cure of disease and the preservation of health." Bigelow, an eminent physician and author of medical works says: "Medicine is the art of understanding diseases and curing or relieving them, when possible." The Universal Cyclopedia, edited by Rossiter Johnson, Ph.D., LL.D., after giving the derivation of the word "medicine" from the Latin word *"medicina,"* defines it to be "the art of a physician, or of healing; the art and science of curing diseases." The Encyclopedia Brittanica under the title, "Medicine," sub-title, "Synoptical view of medicine," says: "Medicine, the subject-matter of one of the learned professions, includes, as it now stands, a wide range of scientific knowledge and practical skill. * * * The science of medicine is the theory of diseases and remedies."

Definitions might be quoted from other writers, but these will suffice to show not only that the word medicine is a technical word, denoting a science or art, comprehending not only therapeutics, but the art of understanding the nature of diseases, the causes that produce them, as well as the art of knowing how to prevent them, hygiene, sanitation and the like. These definitions are fully supported and their correctness thoroughly established by the history of medicine, and its practice as a science or art.

While it is true, as we said above, there has always existed differences among physicians as to the therapeutic agencies that should be employed in the treatment of diseases, yet it has never been supposed that the disciples of any particular school of the healing art were physicians, practitioners of medicine, and those of a different school or sect were not. They have all been regarded by eminent scholars as engaged in the practice of medicine. Doubtless, these differences have produced much good, caused advancement in the art, tended to perfect the science and have given the profession a broader and more enlightened view or insight into this great science.

Dr. Roswell Park in his "Epitome of the History of Medicine" speaks of the origin of medicine as having been nearly contemporaneous with the origin of civilization. He points out that the earliest records of probable authenticity are perhaps to be met with in the Scriptures from which may be gathered here and there a fair notion of Egyptian knowledge and practice. Thus, we read in the 50th chapter of Genesis, that "Joseph commanded his servants, the physicians, to embalm his father; and the physicians embalmed Israel." He also speaks of medicine as the healing art, and traces the practice of it among the Greeks to Æsculapius, whom he says was the leading character in medicine of all the ancients, with the possible exception of Hermes among the Egyptians. He shows that this great physician cured ulcers, wounds, fever and pain of all who applied to him, by enchantment, potions, incisions, and by external applications. So renowned became the name of this illustrious physician, that temples were erected to his fame and in his honor, in which schools of medicine were established and the science taught. These temples existed for centuries and the schools were presided over by the priest, who treated all sick persons who repaired to or were conveyed to them. If not able to go in person, their deputies were sent. The sick person or his representative after ablution, prayer and sacrifice was made to sleep on the hide of a sacrificed animal or at the feet of the statue of the god, while sacred rites were performed. In his sleep the appropriate remedy was indicated by a dream. Moral or dietetic remedies were more often prescribed than drugs. Thus it was that medicine as a science was practiced for centuries in Greece, prior to the advent of Hippocrates (in the 400th century B. C.), to whom is credited the high conception of the duties and status of the physician as shown in his celebrated "Oath" and elsewhere in his writings—"equally free from the mysticism of a priesthood and the vulgar pretensions of a mercenary craft." By some writers, this great physician and philosopher is called the "father of physic." There can be but little doubt that he may be regarded as the founder of the medical profession; that it was by and through his teaching that medicine came to be a distinct art, disconnected and disassociated from sacerdotalism. He wrote many books on medicine, and yet he possessed but little knowledge of anatomy, physiology and pathology and absolutely knew nothing of chemical drugs. Indeed, he and his disciples attached but little importance to drugs as a therapeutic agent, but relied, in acute diseases, mainly upon diet, the variations necessary, in its administration, in different diseases being minutely defined. In the treatment of cases of chronic diseases, diet, exercise and natural methods were chiefly relied upon. Indeed, in those days drugs as therapeutic agencies were of necessity of minor importance in the treatment of the sick, since they were few and since chemical drugs were not discovered until long afterwards, to-wit, about the fifteenth century. For several centuries the Hippocratic school of medicine, known as the dogmatist, prevailed, though there were opposing sects or schools. Succeeding the dogmatist was the school of medicine founded by Asclepiades, who, repudiating the Hippocratic doctrine, adopted hygienic remedies—for the most part bodily exercise. Gymnastic exercises, as was also massage, were fully recognized by the physicians of those days and prescribed by them as therapeutic agents in the healing of diseases. So was water recognized as a scientific remedial agent—technically called hydro-therapy. After the appearance of Galen, a great physician and scholar who is supposed to have died about 200 A. D. at the age of seventy-one years, and who wrote many works on the science of medicine, Europe for thirteen centuries seemed to have yielded to his authority. Indeed, to him the medical profession is indebted for much. Yet, in the revolutions of medical opinion, the works of this great man were publicly burned in the fourteenth century by Paracelsus and his disciples; and for centuries following the medical profession was divided between the Galenist and the chemist until a complete ascendancy over both was obtained by the vitalist. Thus we see that no system of therapeutics has been uniformly followed and, perhaps, as we have said, never will be. Indeed, we might go further and show that at this day the regular practitioners of medicine, as they are known to the profession, recognize the efficaciousness of water, massage, electricity and perhaps other external applications to the body as scientific therapeutic agencies. It may not be amiss in this connection to instance the "rest cure," a thoroughly recognized scientific treatment for mental or nervous troubles. It consists in keeping the patient quiet and at rest, giving to him occasionally a massage, an application of electricity, a sponge bath, with proper diet. No drug is used, except a laxative, occasionally, if necessary. The use of drugs, however, is a secondary consideration and may be dispensed with altogether.

Thus it is made entirely clear both by definitions and history that the word medicine has a technical meaning, is a technical art or science and as a science the practitioners of it are not simply those who prescribe drugs or other medicinal substances as remedial agents, but that it is broad enough to include and does include all persons who diagnose diseases and prescribe or apply any therapeutic agent for its cure.

Is there anything in the language of the statutes which prevents giving to the word medicine its legitimate technical use or meaning? This question can best be answered by tracing the history of the legislation on this subject culminating in the present statutes. Before doing so, however, we should bring to mind the purpose of these enactments and constantly keep before us that the legislative purpose was to protect the public against charlatanism, ignorance and quackery.—*Brooks vs. The State*, 88 Ala., 122. The first enactment on this subject was approved Dec. 22, 1823 (Acts 1823, p. 45), wherein it was provided that no person or persons shall be allowed to practice physic or surgery or any branch thereof *or in any case to prescribe for the cure of diseases* for fee or reward

unless he shall be licensed to do so. That act also provided for the establishment of boards of physicians, whose duty it was to examine the applicant and to grant him the license. In 1832 persons practicing medicine on the botanical system of Dr. Samuel Thompson were exempt from taking out a license. In 1841 it was made the duty of the medical boards to examine and license applicants to practice dental surgery, under the same rules and regulations and subject to the same restrictions, as those who apply for license to practice medicine, and a penalty was imposed upon any person styling himself a dentist or other person who engaged in the practice of dental surgery as a professional business without having been regularly licensed by one of the medical boards.—*Clay's Dig.*, pp. 487, *et seq.* The substantial provisions of these enactments were embodied into the Code of 1852. However, in the adoption of that Code there was added the requirement that all druggists should obtain a license to deal in drugs from the medical board of the county in which such business was pursued.—Code 1852, Section 980. Thus stood the law, with some few amendments which are not necessary to be here noticed, until the act of Feb. 9, 1877 (Acts 1876-7, p. 80), which committed the duty theretofore imposed alone upon the medical boards, to the boards of censors of the several county medical societies in connection with the board of censors of the Medical Association of the State of Alabama. No material change was made by this act with respect to the class of persons required to obtain a license to practice medicine, surgery, dentistry, or to sell drugs except as to those persons who desired to practice some irregular system of medicine and females who practice midwifery. As to irregular practitioners they were prohibited from practicing their system of medicine in any of its branches or departments as a profession and means of livelihood without having obtained a diploma or certificate of qualification in anatomy, physiology, chemistry and the mechanism of labor from some authorized board of medical examiners.—Chaps. 3 and 4 of Code 1876, pp. 460-1. On the 11th day of February, 1881, a board of dental examiners was constituted, whose duty it was to grant licenses to all dentists who may have received licenses from medical boards without examination or fee and to grant licenses to all other applicants who underwent a satisfactory examination, upon the payment of a fee of five dollars.—Code of 1886, Sections 1296 *et seq.* In 1887 a board of pharmacy was established to examine every person desiring to conduct the business of selling at retail, compounding or dispensing drugs, medicines or chemicals, for medical use or compounding or dispensing as pharmacists prescriptions prepared by physicians. In 1895 every physician who was licensed to practice medicine was also authorized to fill prescriptions of other physicians, compound and sell medicines and poisons and carry on the business of pharmacists. As far back as 1875 the Medical Association of the State of Alabama was constituted a board of health for the State and to it was committed cognizance of the interest of health and life among the people of the state; and the duty imposed of investigating the causes and means of prevention of endemic and epidemic diseases; of investigating the influences of localities and employments upon the public health; of making to the law-making branch of the state such suggestions as to legislative action as, in their judgment, may seem advisable. This board of physicians were, in fact, constituted the medical advisers of the state.—Acts 1874-5, p. 130; Code of 1876, Sections 1537 *et seq.*; Code of 1886, Sections 1260 *et seq.* And, at this writing, to this board is entrusted largely the enforcement of all laws relating to public health, quarantine and sanitation.—Code of 1896, Sections 2392 *et seq.*

Thus has been the growth and development of the law in this state regulating "the practice of medicine in any of its branches or departments as a profession." From this growth and development, can it be seriously doubted that it was not the intention or purpose of the legislative mind to restrict the examination of those desiring to practice medicine to that class of the profession who may prescribe drugs as therapeutic agents in the healing of diseases? We think not. On the contrary, the very first enactment on the subject (1823) prohibiting any person from prescribing for the cure of diseases for fee or reward without obtaining a license is a clear, unequivocal and unmistakable declaration of the legislative purpose to deal with medicine and the practice of it in its broad and comprehensive sense—as a science or art of healing and curing diseases. And this purpose has been rather emphasized than otherwise, in subsequent legislation on the subject.

Our conclusion, therefore, is that the defendant was engaged in the practice of medicine within the meaning of the statutes. This conclusion is fully supported by the decisions of other courts. In *Bibber vs. Simpson*, 59 Maine, 181, Appleton, C. J., speaking for the court, said: "The services rendered were medical in their character. True, the plaintiff does not call herself a physician, but she visits her sick patients, examines their condition, determines the nature of the disease, and prescribes the remedies deemed by her most appropriate. Whether the plaintiff calls herself a medical clairvoyant, or a clairvoyant physician, or a clear-seeing physician, matters little; assuredly, such services as the plaintiff claims to have rendered, purport to be and are to be deemed medical." So, it was held that she was not entitled to recover for her services, she having no license to practice medicine.

In *Hewitt v. Charier*, 16 Pick., 353, it was held, Shaw, C. J., delivering the opinion, that "a person who practices bonesetting and reducing sprains, swellings and contractions of the sinews, by frictions and fomentation, but no other branch of the healing art, is a person practicing surgery, within the meaning of St. 1818, c. 113, Section 1, which provides, that no person practicing physic or surgery shall be entitled to the benefit of law for the recovery of his fees, unless he shall have been licensed by the Massachusetts Medical Society or graduated a doctor in medicine in Harvard University."

In *Davidson vs. Bohlman*, 37 Mo. App., 576, it was held that: "The statutes restricting the right to practice medicine and surgery to registered physicians and surgeons and requiring the filing of diplomas, apply to one who as a physician gives electric treatments; it is not necessary that one should administer internal remedies in order to practice medicine within the meaning of the statutes" which prohibited the practice or the attempt to practice medicine or surgery without first filing a diploma, etc.

The case of *Eastman vs. The People*, 71 Ill., 236, is directly in point. The appellant there, as here, was engaged in the practice of osteopathy. The statute of Illinois defined practitioners of medicine in this language: "Any person shall be regarded as practicing medicine within the meaning of this act who shall treat, operate on or prescribe for any physical ailment of another." The court after saying that the appellant "professes to be able to diagnose and advise in respect to a long list of diseases, and to furnish discriminating and efficient treatment to those who may come to him, and while he may rely wholly upon manipulation, flexing, rubbing, extension, etc., yet he professes to have skill and judgment in these methods, so as properly to adapt the treatment to each case, giving it what is appropriate, in amount, and with repetition at such times and to such extent as may be dictated by his knowledge and experience;" and after stating Bigelow's and Dunglison's definitions of medicine, held that the practice of osteopathy was the practice of medicine. We need only add that our statutes are not so materially different from the statute construed in that case as to impair the decision of it, in any degree, as an authority directly upon the question in hand. So also is the case of *Little vs. The State*, 51 L. R .A., 717, being an osteopathy case, directly in point. See also *Underwood vs. Scott* (Kan.), 23 Pac. Rep., 942; *Jones vs. People*, 82 Ill. App., 453; *People vs. Gordon*, 62 N. E. Rep., 858.

We have examined the cases relied upon by appellant. Some of them are perhaps in point, but are opposed to our view of the law.

The next point we shall consider is the one assailing the constitutionality of these statutes. We need but refer to the following cases and the reasoning employed in them to uphold the constitutionality of this legislation: *Brooks vs. The State*, 88 Ala., 122; *Stough vs. The State*, Ib., 234; *Bell vs. The State*, 104 Ala., 79; *Nicholson vs. The State*, 100 Ala., 132; *Hewitt vs. Charier*, 16 Pick., 353; *Dent vs. West Virginia*, 129 U. S., 114; *Alopathic State Board, etc. vs. Fowler*, 24 So. Rep., 809; *Harding vs. People*, 15 Pac. Rep., 727; *State vs. Webster*, 41 L. R. A., 212, and cases cited on page 217.

So likewise, the contention that the associations and boards of censors are not regularly organized under the constitution of the "Medical Association of the State of Alabama" is untenable. It is enough that the boards of examiners are *de facto* acting under the provisions of the statutes and that its certificate of qualification would protect defendant from prosecution for a violation of the criminal statute.

The remaining insistence relied upon, rather as an excuse or palliation for a violation by defendant of the law, is no justification or excuse at all. It is, that the boards of examiners as presently constituted discriminate in favor of those physicians who practice the regular system of medicine against all who practice other systems or belong to other schools. If it be conceded that this fact is shown by the record, it furnishes to defendant no right to violate the criminal laws of the state. His remedy is by proper procedure in the civil courts, in the event his application for license is rejected. It strikes us that this defense is an afterthought. The record does not even hint at any attempt on the part of the defendant to procure a license. He rather chose to construe the law to suit his own notions and engaged in the practice of medicine without even making any effort whatever to comply with its mandates or even to have the unjust discrimination of which he complains, removed before engaging in the practice.—*Dent vs. West Virginia, supra; Harding vs. People, supra; Alopathic State Board, etc., vs. Fowler, supra; Iowa Asso. vs. Schrader*, 20 L. R. A., 355.

The defendant was properly convicted.

Affirmed.

Association News.

Notice to Laryngologists.—For the general good of the Section on Laryngology and Otology, the Section officers desire as complete a list as possible of all members of the American Medical Association who desire to be classified in this Section. It was ordered at the Saratoga meeting that this list be secured at once and published in the Transactions for 1902. Kindly send your name at once to the secretary, so that the published list may be complete and useful. (Signed.) John F. Barnhill, secretary, Indianapolis, and Edwin Pynchon, Chicago, committee.

[The above notice appeared in the issue of July 5. Dr. Barnhill reports that it resulted in the receipt by him of many names, but only a fraction of the number that ought to be recorded.]

AMERICAN MEDICAL ASSOCIATION.

Fifty-third Annual Meeting, held at Saratoga Springs, N. Y., June 10-13, 1902.

Minutes of the Section on Materia Medica, Pharmacy and Therapeutics.

TUESDAY, JUNE 10—AFTERNOON SESSION.

The Section was called to order at 2:30 p. m., in the Grand Union Hotel, by the Chairman, Dr. Geo. F. Butler, Alma, Mich.

The Chairman delivered his address.

The list of delegates from the American Pharmaceutical Association was presented by the Secretary.

On motion of Dr. W. B. Hill, Milwaukee, the persons named were invited to participate in the sessions of the Section.

Paper No. 2, "The Place and Importance in the College Curriculum of Materia Medica," was read by Dr. Warren B. Hill, Milwaukee.

Paper No. 3, "The Place and Importance in the College Curriculum of Pharmacy," by Dr. Jacob A. Patton, Chicago, was, in the absence of the author, read by title.

Paper No. 4, "The Place and Importance in the College Curriculum of Therapeutics," was read by Dr. Hobart A. Hare, Philadelphia.

The papers were discussed by Drs. Le Febre, New York; A. W. Baer and Frances Dickinson, Chicago; W. J. Robinson, New York; E. H. Long, Buffalo; H. R. Slack, LaGrange, Ga.; H. C. Wood, Jr., and S. Solis Cohen, Philadelphia. Discussion closed by Dr. Hill.

The following were constituted the Nominating Committee: Drs. Heinrich Stern, New York; Almeron X. Baer, Chicago, and Henry R. Slack, Georgia.

The following papers were, in the absence of their authors, read by title: Papers No. 5, "The U. S. Pharmacopeia of 1900," by Prof. Joseph P. Remington, Philadelphia, and No. 6, "The Goat in Ancient and Modern Medicine and Therapy," by Dr. Frank W. Jay, Chicago.

It was ordered by the Chairman that all papers consumed at the fire which destroyed the U. S. Postoffice at Saratoga, Monday morning, be read by titles in the absence of the authors, and referred for publication under the by-laws.

WEDNESDAY, JUNE 11—MORNING SESSION.

Called to order by the Chairman at 9:30.

Paper No. 7, "The Relative Toxicity of Brucin and Strychnin," by Dr. Leon L. Solomon, Louisville, supposed to have been destroyed by fire, was, in the absence of the author, read by title.

Paper No. 8, "The Tropeins," was read by Dr. Albert B. Lyons, Detroit.

Paper No. 9, "The Physiologic Action of the Mydriatic Alkaloids," was read by Dr. Horatio C. Wood, Jr., Philadelphia.

Paper No. 11, "The Ophthalmologic Relations of the Mydriatic Drugs and Their Active Principles," was, in the absence of the author, by unanimous vote, read in abstract by the Secretary.

These papers were discussed by Drs. A. W. Baer, Chicago; W. J. Robinson, New York; A. B. Lyons, Detroit, and the discussion closed by H. C. Wood, Jr., Philadelphia.

Caswell A. Mayo, New York, responded to the invitation to participate in the sessions for the delegates from the American Pharmaceutical Association.

WEDNESDAY, JUNE 11—AFTERNOON SESSION.

Called to order, 2:30 p. m.

Paper No. 11, "The Cardiac Stimulants," was read by Dr. Jos. M. Patton, Chicago, and discussed by Drs. H. C. Beates, Philadelphia; W. J. Robinson, and H. Stern, New York; H. C. Wood, Jr., and S. Solis Cohen, Philadelphia; W. W. Tompkins, Georgia; C. S. N. Hallberg, Chicago, and closed by Dr. Patton.

Paper No. 12, "The Cardiac Sedatives," was read by Dr. L. Faugeres Bishop, New York, and discussed by Drs. H. C. Beates and S. Solis Cohen, Philadelphia; W. J. Robinson, New York, and closed by Dr. Bishop.

Paper No. 13, "Pneumonia: Venesection and Counter-Irritation," was read by Dr. James Tyson, Philadelphia, and discussed by Drs. Edward F. Wells, Chicago; S. Solis Cohen and H. C. Beates, Philadelphia; W. W. Tompkins, Georgia, and closed by Dr. Tyson.

Paper No. 14, Pneumonia: Its Drug Treatment," was read by Dr. Arthur A. Stevens, Philadelphia.

This paper was discussed by Drs. W. J. Robinson, New York; Edward F. Wells and Joseph M. Patton, Chicago; H. C. Wood, Jr., Philadelphia; Thos. F. Reilly, New York; A. B. Lyons, Detroit; H. H. Briggs, Asheville, N. C.; W. W. Tompkins, Georgia, and closed by Dr. Stevens.

Paper No. 15, "Wintergreen Oil in Constitutional States," was supposed to have been destroyed by fire, and in the absence of the author was read by title.

Paper No. 16, "Intraorganic Treatment of the Pneumonic Lung," was read by Dr. W. Byron Coakley, Chicago, and discussed by Dr. W. A. McPherson, LeRoy, N. Y.

THURSDAY, JUNE 12—MORNING SESSION.

Called to order at 9:30.

Paper No. 17, "Glycosuric Symptom of Disease," was read by Dr. Heinrich Stern, New York, and discussed by Drs. W. W. Tompkins, Georgia; H. C. Wood, Jr., Philadelphia; J. C. DeVinney, Harrisburg, Pa.; H. R. Slack, LaGrange, Ga.; W. J. Robinson, New York; A. B. Lyons, Detroit, and the discussion closed by Dr. Stern.

The following papers were read by titles in the absence of their authors: Paper No. 19, "Diuretics: Their Comparative Value," by Dr. William L. Baum, Chicago; Paper No. 20, "Alcoholics in Therapy," by Dr. J. Moore Soniat, New Orleans; Paper No. 21, "American Mineral Springs," by Dr. George H. Fish, Saratoga Springs, N. Y.; Paper No. 22, "Constipation; Its Therapeutic Significance," by Dr. James G. Kiernan, Chicago.

Paper No. 24, "The External Preparations and Their Therapy," was read by Prof. C. S. N. Hallberg, Chicago, and was discussed by Dr. A. W. Baer, Chicago.

On motion of Dr. Heinrich Stern, New York, the following resolution was passed:

Resolved, That boards of health have important functions to perform in the way of collecting statistics and data as to epidemic diseases, the abatement of nuisances, and the distribution of information that will tend to the betterment of the hygienic conditions and the conservation of the public health within their respective provinces; but that it is undesirable that their energies should be frittered away in efforts to undertake extraneous duties, such as the indiscriminate performance of vaccinations, which trenches on the rights of regular practitioners, and the manufacture of vaccine virus and antitoxin, for which they have not adequate facilities, and which brings them into unfair competition with the firms and individuals who are engaged in the manufacture and sale of these products.

On motion of Dr. W. J. Robinson, New York, a resolution limiting distribution of samples and advertising by exhibitors to persons wearing the official badges of the Association was passed.

THURSDAY, JUNE 12—AFTERNOON SESSION.

Called to order at 2 p. m.

The Nominating Committee presented the following names for officers, and the persons named were elected by ballot: Dr. Solomon Solis Cohen, Philadelphia, Chairman; Prof. C. S. N. Hallberg, Chicago, Secretary; Dr. Warren B. Hill, Milwaukee, Wis., for member of House of Delegates.

In the absence of any member of the regular Executive Committee, the Chairman appointed the following to serve for the meeting: Drs. Almeron W. Baer, Chicago; Albert B. Lyons, Detroit, and W. J. Robinson, New York.

Paper No. 23, "Cutaneous Therapy; Some of the Newer Methods," was read by Dr. Chas. W. Allen, New York, and discussed by Drs. C. H. Skinner, New Haven, Conn.; Henry Rockwell Varney, Detroit; A. W. Baer, Chicago; W. J. Robinson, New York, and the discussion closed by Dr. Allen.

Paper No. 32, "The Hypodermic Administration of Mercury in Syphilis," was read by Dr. Eugene Fuller, New York. The paper was discussed by Drs. A. W. Baer, Chicago; W. J. Robinson, New York, and the discussion closed by Dr. Fuller.

Paper No. 28, "Nerve Nostrums and Their Dangers," was read by Dr. William P. Spratling, Sonyea, N. Y., and Paper No. 29, "Hypnotics, Analgesics and Resultant Drug Addictions," was read by Dr. Smith Ely Jelliffe, New York. These two papers were discussed by Drs. Frank Woodbury and H. C. Wood, Jr., Philadelphia; W. J. Robinson, New York, and W. L. Dickerson, St. Louis. Also by Dr. H. Schweitzer, New York, who was given the privilege of the floor.

On motion of Dr. A. W. Baer, the papers read, Nos. 28 and 29, were referred to a special committee of three to report on at the next meeting.

The newly elected Chairman, Dr. S. Solis Cohen, who had assumed the chair, appointed the following as the committee: Drs. A. W. Baer, Chicago; W. J. Robinson, New York, and H. C. Wood, Jr., Philadelphia.

Paper No. 30, "Prescription Repetition and Its Dangers," by Dr. W. C. Alpers, New York, was, in the absence of the author, read by title.

Paper No. 31, "Dosage of Liquid Medicines," was read by Prof. C. S. N. Hallberg, Chicago, and the subject referred to a committee to report at the next meeting. The Chairman appointed as such committee, Drs. H. C. Wood, Jr., Frank Woodbury, and A. A. Eshner, Philadelphia.

A resolution presented by the Secretary favoring the passage of a bill before Congress to introduce the metric system of weights and measures, was passed and referred to the House of Delegates.

The Section then adjourned *sine die*.

List of Members Registered in the Sections.—Total, 1413.

Section on Practice of Medicine.

Acker, T. J., Croton-on-Hudson, N. Y.
Atwood, J. W., Fishkill-on-Hudson, N. Y.
Arnold, Philip, Elizabeth, Ill.
Adams, J. F. A., Pittsfield, Mass.
Andrews, J. M., Philadelphia.
Ambler, C. P., Asheville, N. C.
Allen, U., Jersey City, N. J.
Allen, H. J., Corinth, N. Y.
Alton, C. DeL., Hartford, Conn.
Andrews, G. R., Mt. Summit, Ind.
Ashcroft, J. E., Monroe, N. C.
Beck, H. G., Baltimore.
Bond, J. L., Ukiah, Cal.
Bullis, E. S., Glens Falls, N. Y.
Barney, R., Chillicothe, Mo.
Bacon, C. J., Fulton, N. Y.
Beattie, F. T., Shushan, N. Y.
Backenstoe, M. J., Emaus, Pa.
Bill, C. H., Bridgeport, Conn.
Bishop, L. F., New York.
Burns, W. B., Memphis, Tenn.
Bailey, W., Louisville, Ky.
Bowden, D. F., Paterson, N. J.
Buchman, A. P., Ft. Wayne, Ind.
Bagley, W. R., Duluth, Minn.
Bodine, J. M., Louisville, Ky.
Burbeck, C. H., Troy, N. Y.
Billings, F., Chicago.
Barber, A. E., Glens Falls, N. Y.
Barber, T. L., Charleston, W. Va.
Barnett, J. R., Neenah, Wis.
Beach, Judson, Ithaca, N. Y.
Beazley, W. S., Richmond, Va.
Biggs, G. W., Sioux City, Iowa.
Bemus, W. M., Jamestown, N. Y.
Bemus, M. N., Jamestown, N. Y.
Bierwirth, J. C., Brooklyn.
Biggs, C. P., Ithaca, N. Y.
Bower, G. B. M., Ft. Wayne, Ind.
Bucher, I. R., Lebanon, Pa.
Burlingame, D. E., Elgin, Ill.
Burrows, S. S., Geneva, Ohio.
Burroughs, J. A., Asheville, N. C.
Chisholm, A. S. M., Bennington, Vt.
Chowning, T., Hannibal, Mo.
Clarke, H. E., Glens Falls, N. Y.
Cahill, J. T., Hoosick Falls, N. Y.
Conley, A. T., Cannon Falls, Minn.
Coleman, T. D., Augusta, Ga.
Congdon, W. O., Cuba, N. Y.
Caverly, C. S., Rutland, Vt.
Cabot, R. C., Boston.
Cowell, G. B., Bridgeport, Conn.
Campbell, E. R., Bellows Falls, Vt.
Carrington, P. M., Ft. Stanton, N. M.
Clagett, L. S., Blairsville, Pa.
Clarke, R. C., Pittsburg, Pa.
Cooper, J. C., Philadelphia.
Coleman, N. R., Columbus, Ohio.
Curtis, G. L., New York.
Carlin, P. V., Denver, Colo.
Croftan, A. C., Philadelphia.
Craig, R. W., Phœnix, Ariz.
Champlin, J., Westerly, R. I.
Croft, T. G., Aiken, S. C.
Cross, F., Kingston, Pa.
Clayton, T. A., Washington, D. C.
Chapman, G. A., Glens Falls, N. Y.
Christy, F. M., Altoona, Pa.
Cunningham, R. McW., Ensley, Ala.
Church, T. C., Valley Falls, N. Y.
Cromble, J. B., Allegheny, Pa.
Carlton, J. S., Big Plain, Ohio.
Chapman, E. D., Chicopee, Mass.
Conklin, S. A., Canton, Ohio.
Dunn, W. LeR., Asheville, N. C.
Dickes, J. T., Portland, Ind.
Drury, E. J., Phœnix, N. Y.
Douglass, J. W., Boonville, N. Y.
Davis, T. D., Pittsburg, Pa.
Dunmire, G. B., Philadelphia.
Dennis, F. W., Unionville, N. Y.
DeVenney, J. C., Harrisburg, Pa.
DeForest, A. M., Detroit.
Dodin, H. A., New York.
Dock, G., Ann Arbor, Mich.
Davis, N. S. Jr., Chicago.
Downes, A. S., Saratoga Springs.
Didama, Syracuse, N. Y.
Elliott, A. R., Chicago.
Eastman, H. A., Jamestown, N. Y.
Elder, F. H., Philadelphia.
Edwards, J., Gloversville, N. Y.
Emmert, J. M., Atlantic, Iowa.
Elliott, J. T., East Liverpool, O.
Elliott, J. M., Hickory Corners, Mich.
Evans, J. G., New Hartford, Ia.
Edwards, L. B., Richmond, Va.
Edwards, A. S., Syracuse, N. Y.
Eliot, L., Washington, D. C.
Ely, W. S., Rochester, N. Y.
Eisenstaedt, Solomon, Chicago.
Fitzgerald, D. J., Glens Falls, N. Y.
Fairbanks, J. R., Amsterdam, N. Y.
Fleming, J. C., Burlington, Ia.
Frissell, S., Springfield, Mass.
Fassett, C. W., St. Joseph, Mo.
Foshay, P. M., Cleveland.
Fisher, W. N., Washington, D. C.
Fronfield, J. H., Media, Pa.
Fussell, N. H., Philadelphia.
Farrington, J. M., Binghamton, N. Y.
Fox, E. G., Wethersfield, Conn.
Fox, C. J., Willimantic, Conn.
French, H. T., Deep River, Conn.
Funk, D. S., Harrisburg, Pa.
Fuller, G. E., Monson, Mass.
Ferguson, F. B., Deer Isle, Maine.
Foote, C. J., New Haven, Conn.
Futcher, T. B., Baltimore.
Foskett, G. M., Worcester, Mass.
Favill, H. B., Chicago.
Foster, T. J., Scottville, Mich.
Foster, W. S., Pittsburg, Pa.

Gage-Day, Mary, Kingston, N. Y.
Garcin, R. D., Richmond, Va.
Gardner, E. R., Montrose, Pa.
Griffin, C. E., Fair Haven, Vt.
Gass, J., Sheffield, Pa.
Gildersleeve, J. R., Tazewell, Va.
Gariock, W. D., Little Falls, N. Y.
Gaddis, L. S., Uniontown, Pa.
Guilford, W. M., Lebanon, Pa.
Grosvenor, J. W., Buffalo.
Gibbs, L. J., Chicopee, Mass.
Gray, A. W., Milwaukee.
Garcelon, A., Lewiston, Me.
Gow, F. F., Schuylerville, N. Y.
Gudden, B. C., Oshkosh, Wis.
Greenley, T. W., Baltimore.
Greene, C. W., Binghamton, N. Y.
Greenley, T. B., Meadow Lawn, Ky.
Gibson, C. R., Woodsville, N. H.
Green, J. H., North Vernon, Ind.
Green, C. O., Hornellsville, N. Y.
Gifford, H. B., Juda, Wis.
Heritage, C. S., Glassboro, N. J.
Hall, J., Westfield, Ill.
Hayford, E. L., Chicago.
Henslin, A. E., LeRoy, Minn.
Holton, H. D., Brattleboro, Vt.
Humrichouse, J. W., Hagerstown, Md.
Hoover, C. F., Cleveland, Ohio.
Heller, I. M., New York.
Hewitt, A., Saratoga Springs.
Hamilton, J. H., Union, S. C.
Hoog, D. E., Brooklyn.
Herbst, H. H., Allentown, Pa.
Hobson, A. J., Hampton, Ia.
Hollister, J. H., Chicago.
Hutton, M. B., Valley Falls, N. Y.
Higbee, W. S., Philadelphia.
Hough, H. P., Rahway, N. J.
Hare, H. A., Philadelphia.
Harvey, E. B., Boston.
Hughes, J. W., Latrobe, Pa.
Hunter, C. H., Minneapolis.
Hendrick, H. C., McGraw, N. Y.
Harris, E. E., New York.
Hunter, J. W., Waco, Texas.
Haynes, J. U., Cohoes, N. Y.
Happel, T. J., Trenton, Tenn.
Harvey, R. H., Chicago.
Hitzrot, H. W., McKeesport, Pa.
Hunt, W. J., Glens Falls, N. Y.
Hull, A. P., Montgomery, Pa.
Herrick, J. B., Chicago.
Howard, F. H., Williamstown, Mass.
Ingals, E. F., Chicago.
Imrie, A. W., Detroit, Mich.
Johnson, A. W., Mechanicsville, N. Y.
Johnson, C., Denver, Colo.
Jump, H. D., Philadelphia.
Johnson, H. W., Hudson, N. Y.
Jones, I. D., Cincinnati.
Joy, J. A., Atlantic City, N. J.
Jones, A. A., Buffalo.
Johnson, F. S., Chicago.
Jenkins, G. F., Keokuk, Iowa.
Jones, F. A., Memphis, Tenn.
Jenkins, J. F., Tecumseh, Mich.
Knott, J. M., Sioux City, Ia.
Kinnear, B. O., Clifton Springs, N. Y.
Kip, H., Paterson, N. J.
Kinard, J. W., Lancaster, Pa.
Kelly, A. O. J., Philadelphia.
Kidder, F. T., Woodstock, Vt.
Kunkel, H., Kingston, Pa.
Kemper, G. W. H., Muncie, Ind.
Kimball, H. H., Minneapolis.
Knight, A. L., Cincinnati.
Kline, W. J. K., Greensburg, Pa.
King, J. T., Baltimore.
Kinyoun, J. J., Glenolden, Pa.
Kremer, N. A., Madison, Ind.
Littig, L. W., Iowa City, Ia.
Larned, E. R., Chicago.
Lester, E., Seneca Falls, N. Y.
Lee, E., New York.
Lemke, A. F., Chicago.
Long, A. A., York, Pa.
Lichty, J. A., Pittsburg, Pa.
LeRoy, I. D., Pleasant Valley, N.Y.
Libman, E., New York.
Luck, H. C., Cleveland, Ohio.
Law, G., Greely, Colo.
LeFevre, E., New York.
Leech, Frank, Washington, D. C.
Lyon, E. M., Plattsburgh, N. Y.
Moyes, S. R., Monroe, Wis.
McConnel, H. S., New Brighton, Pa.
McCrimmon, F. W., Butte, Mont.
Malone, J. W., Brooklyn.
Marmion, R. A., Washington, D. C.
Moore, R. C., Omaha, Neb.
Marchand, J. F., Canton, Ohio.
Martine, G. R., Glens Falls, N. Y.
Miller, A. I., Brattleboro, Vt.
Modell, D. A., Philadelphia.
Meek, E., Little Rock, Ark.
Martin, R. W. M., Lynchburg, Va.
McGovern, J. J., Milwaukee.
Morrow, E. O., Canton, Ohio.
Moots, C. W., Delphos, Ohio.
Mathews, G. S., Providence, R. I.
McElroy, J. B., Stovall, Miss.
Meyer, G. L., Palatine, N. Y.
Mowery, H. A., Marietta, Pa.
McCrae, T., Baltimore.
Morgan, J. D., Washington, D. C.
Macpherson, W. A., LeRoy, N. Y.
Mills, D. C., New Lebanon, Ohio.
Miller, D. C. R., Mason and Dixon, Pa.
Mastin, N. W., Wellsboro, Pa.
Morse, F. D., Lawrence, Kan.
Maxwell, J. B., Mt. Carmel, Ill.
Main, R. H., Barry, Ill.
Marvel, P., Atlantic City, N. J.
McAnally, J. T., Carbondale, Ill.
Mann, F. W., Detroit.
May, C. S., New York.
Middleditch, J., Rome, N. Y.
Maloney, F. W., Rochester, N. Y.
Moulton, M. W., Bellevue, Ia.
Marden, W. C., Pittsfield, Me.
Minnick, W. H., Dallastown, Pa.
Moylan, P. F., Philadelphia.
McElroy, J. R., Jonesville, N. Y.
Mahoney, J. J., Jamestown, N. Y.
Murphy, G. A., Troy, N. Y.
Mayturn, W. J., Alexandria, S. D.
MacNamara, J. G., St. Paul.
Miller, J. L., Corning, N. Y.
Newton, A. L., Northfield, Mass.
Nichols, H. B., Pulteney, N. Y.
Nichols, C. E., Troy, N. Y.
Nagle, T. S., Allentown, Pa.
Newton, L. B., N. Bennington, Vt.
Neary, P. M., Cortland, N. Y.
Neer, H. C., Park Ridge, N. J.
Norbury, F. P., Jacksonville, Ill.
Otis, S. D., Meriden, Conn.
Oettiker, J., Platteville, Wis.
Osgood, F. L., Saxton's River, Vt.
Osler, W., Baltimore.
Peck, C. W., Brandon, Vt.
Paulson, D., Chicago.
Pfaff, O., Oneida, N. Y.
Pfahler, G. E., Philadelphia.
Pratt, J. H., Manchester, N. Y.
Putnam, J. W., Lyons, N. Y.
Putnam, B. H., North East, Pa.
Probasco, E. B., Glens Falls, N. Y.
Phillips, M. O., Fremont, Ohio.
Powers, T. E., Clarinda, Iowa.
Porch, G. B., Johnstown, Pa.
Phillips, C. B., Hurffville, N. J.
Patton, J. M., Chicago.
Preble, R. B., Chicago.
Palmer, E. A., Hartford, Mich.
Quinby, C. E., New York.
Ray, J. B., Omega, Ohio.
Rodman, W. E., Hodgensville, Ky.
Roan, C. F., Chicago.
Rudden, J. T., Bellows Falls, Vt.
Ritchey, J. A., Oil City, Pa.
Reed, B., Philadelphia.
Romine, G. L., Lambertville, N. J.
Reynolds, J. C., Lake Geneva, Wis.
Richmond, W. W., Clinton, Ky.
Rhodes, L. G., South Haven, Mich.
Rodgers, C. W., Staunton, Va.
Reynolds, W., Atlantic City, N. J.
Riesman, David, Philadelphia.
Reed, J. H., Battle Creek, Mich.
Riegel, H. H., Catasauqua, Pa.
Randolph, B. M., Philadelphia.
Randall, W. S., Shelton, Conn.
Reber, W. W., Lehighton, Pa.
Root, J. E., Hartford, Conn.
Roussel, A. E., Philadelphia.
Rutherford, J. E., Instanter, Pa.
Stoddard, R. O., N. Ferrisburgh, Vt.
Swan, J. M., Philadelphia.
Scott, J. W., Houston, Texas.
Shaw, O. C., Cassadaga, N. Y.
Sabin, W. B., Watervliet, N. Y.
Stillman, E. R., Troy, N. Y.
Smelzer, R. T., Albany, N. Y.
Stearns, R., Mifflinsburg, Pa.
St. John, W. B., Bristol, Tenn.
Sherman, C. F., Hadley, N. Y.
Saeger, L. J., Allentown, Pa.
Spicer, S. S., Cedar Rapids, Iowa.
Stone, A. J., St. Paul, Minn.
Springer, W., Wilmington, Del.
Steinke, H. C. O., Brooklyn.
Schneck, J., Mt. Carmel, Ill.
Sherman, F. J., Ballston Spa, N.Y.
Sassman, F. W., Valparaiso, Ind.
Squibb, E. H., Brooklyn.
Smith, J. C., Oneonta, N. Y.
Steele, J. D., Philadelphia.
Shutt, M. T., Springfield, Ill.
Scofield, C. L., Benson, Minn.
Skinner, D. M., Belleville, N. J.
Slagle, C. D., Centerville, Ohio.
Staneff, Demetrius, Chicago.
Smith, F. B., Washington, R. I.
Stranahan, J. O., Rome, N. Y.
St. John, F. W., Charlton, N. Y.
Smith, E. F., New York.
Stockdale, T. T., Rural Valley, Pa.
Stone, H. H., Phœnix, Ariz.
Smith, F. A., Corinth, N. Y.
Stout, H. A., Wenonah, N. J.
Stowell, J. H., Chicago.
Skinner, C. E., New Haven, Conn.
Stewart, J. L., Irene, S. D.
Solis-Cohen, S., Philadelphia.
Sarles, W. T., Sparta, Wis.
Scott, W. E., Adel, Iowa.
Sawyer, F. M., South Bend, Ind.
Stewart, C. E., Battle Creek, Mich.
Strickler, A. H., Waynesboro, Pa.
Salinger, J. L., Philadelphia.
Stoddard, F. R., Shelburne, Vt.
Simpson, T. P., Beaver Falls, Pa.
Stern, Heinrich, New York.
Seiple, S. C., Center Square, Pa.
Shelton, G. A., Shelton, Conn.
Stockton, C. G., Buffalo.
Shannon, J. E., Sharon, Tenn.
Shotwell, A. N., Mt. Clemens, Mich.
Scarborough, J. R., Spring Hill, Ky.
Seiberling, F. C., Allentown, Pa.
Schilling, C. E., Canton, Ohio.
Stanton, T. C. P., Charlton, Iowa.
Satterwhite, T. P., Louisville, Ky.
Taylor, W. V., McKeesport, Pa.
Taylor, J. H., Holley, N. Y.
Talley, J. E., Philadelphia.
Tweddale, J., Washburn, Ill.
Tyson, J., Philadelphia.
Taylor, J. L., Wheelersburg, Ohio.
Thornton, W. H., Buffalo.
Thayer, A. L., Portland, Me.
Turck, F. B., Chicago.
Tefft, C. B., Utica, N. Y.
Tobin, J. H., Schuylerville, N. Y.
Traver, L., Providence, R. I.
Tureman, H. G., Kansas City, Mo.
Taylor, C. F., Philadelphia.
Vaughan, V. C., Ann Arbor, Mich.
Van Vredenburgh, W. T., New York.
Ver Nooy, C. DeP., Cortland, N. Y.
Van Horne, B. G., Englewood, N. J.
Wilkerson, W. M., Montgomery, Ala.
Wheeler, J. T., Chatham, N. Y.
Webb, DeW., St. Augustine, Fla.
Wright, F. T., Calumet, Mich.
Ward, W. H., Phœnix, Ariz.
Whitmore, B. T., Chicago.
Walker, J. B., Effingham, Ill.
Witherstine, H. H., Rochester, Minn.
Will, O. B., Peoria, Ill.
Weaver, J. K., Norristown, Pa.
Wilson, J. H., Beaver, Pa.
Wick, D. M., Cedar Falls, Iowa.
Wilson, D. C., Ironton, Ohio.
Woodburn, S. M., Towanda, Pa.
Whitney, C. A., New York.
Witherspoon, J. A., Nashville, Tenn.
Weeks, O. W., Marion, Ohio.
Wadsworth, J. E., Skowhegan, Me.
Walsh, J. J., New York.
Warner, J. W., Saratoga Springs.
Wells, E. F., Chicago.
Whitcomb, H. H., Norristown, Pa.
Welch, S. A., Providence, R. I.
Webster, G. W., Chicago.
White, W. R., Providence, R. I.
Wilson, L. D., Wheeling, W. Va.
West, H. A., Galveston, Tex.
Wilson, J. G., Montrose, Pa.
Watkins, R. L., New York.
Webster, Wm. B., Schuylerville, N. Y.
Walker, A. E., Duluth, Minn.
Woodworth, T. F., Kinderhook, N. Y.
Wilson, M. J., Warsaw, N. Y.
Ward, Edwin M., Bloomfield, N. J.
Williams, W. T., Mt. Carmel, Pa.
Yerdon, C. F., Brooklyn, N. Y.
Zwisohn, L. W., New York.

Section on Obstetrics and Diseases of Women.

Anderson, W., San Francisco.
Abbott, A. W., Minneapolis.
Anway, J. D., Chicago.
Bullard, R. T., Los Angeles, Cal.
Bryan, G. C., Alamogordo, N. Mex.
Boyd, G. M., Philadelphia.
Bartlett, C. W., N. Bennington, Vt.
Burhyte, O. W., Brookfield, N. Y.
Bacon, C. S., Chicago.
Ballery, G. H., Paterson, N. J.
Beyea, H. D., Philadelphia.
Bonifield, C. L., Cincinnati.
Bovée, J. W., Washington, D. C.
Bremmer, H. A., Ashton, Ill.
Butz, R. E., York Pa.
Burtenshaw, J. H., New York.
Campbell, D., Butte, Mont.
Carpenter, J. W., Cincinnati.
Cullen, T. S., Baltimore.
Cushing, E. W., Boston.
Chason, J. D., Bainbridge, Ga.
Cohn, B., Buffalo.
Carstens, J. H., Detroit, Mich.
Cone, J. E., Youngstown, O.
Callen, J. S., Shenandoah, Pa.
Dudley, A. P., New York.
Davis, F. F., Oil City, Pa.
Dean, G. R., Spartansburg, S. C.
Dunning, L. H., Indianapolis, Ind.
Davis, W. E. B., Birmingham, Ala.
Downes, A. J., Philadelphia.
Dodge, A. P., Oneida, N. Y.
Davis, J. C., Rochester, N. Y.
Devereux, J. P., Philadelphia.
Dorland, W. A. N., Philadelphia.
De Vries, J. C., Washington, D. C.
Ehrenfest, H., St. Louis, Mo.
Forcee, M. P., Allegheny, Pa.
Faison, W. F., Jersey City, N. J.
Findley, W. M., Altoona, Pa.
Frederick, C. C., Buffalo.
Fitzgibbon, T., Milwaukee, Wis.
Fleming, C. K., Denver, Colo.
Ferguson, E. D., Troy, N. Y.
Gilcreest, J. E., Gainesville, Tex.
Gilbert, H., Hornellsville, N. Y.
Goffe, J. R., New York.
Godfrey, C. C., Bridgeport, Conn.
Goode, B. P., Cincinnati.
Goelet, A. H., New York.
Goldspohn, A., Chicago.
Gildden, C. H., Little Falls, N. Y.
Gallant, A. E., New York.
Gillette, W. J., Toledo, Ohio.
Gillespie, G. B., Covington, Tenn.
Gosnell, J. C., Ilwaco, Wash.
Hart, F. E., Canton, O.
Harrison, G. T., New York.
Harvie, J. B., Troy, N. Y.
Harris, P. A., Paterson, N. J.
Holmes, R. W., Chicago.
Humphrey, J. F., Saratoga Sprgs.
Hall, R. B., Cincinnati.
Haughey, W. H., Battle Creek, Mich.
Holiday, J. W., Burlington, Ia.
Hayden, A. M., Evansville, Ind.
Hamilton, J., Rutland, Vt.
Haines, J. C., Vincentown, N. J.
Humiston, W. H., Cleveland.
Howard, E. C., Philadelphia.
Ingraham, H. D., Buffalo, N. Y.
Johnson, H. L. E., Washington, D. C.
Jack, H. P., Canisteo, N. Y.
Jonas, A. F., Omaha, Neb.
Kimball, A. G., Jackson, Mich.
Kelly, H. A., Baltimore, Md.
Kelly, W. D., St. Paul, Minn.
King, J. C. E., Salt Lake City.
Kolischer, G., Chicago.
Lobdell, E. L., Chicago.
Leonard, C. H., Detroit, Mich.
Longenecker, C. B., Philadelphia.
Lee, H. J., Cleveland.
Leo, J. B., New York.
Lombard, G. D., New York.
Metcalf, W. F., Detroit.
Mackey, A. N., Aledo, Ill.
McGill, P. G., W. Superior, Wis.
Marcy, H. O., Boston.
Montgomery, E. E., Philadelphia.
McMurtry, L. S., Louisville, Ky.
Monash, D. F., Chicago.
McNeil, G. W., Pittsburg, Pa.
Miller, V. D., Needham, Mass.
Massey, G. B., Philadelphia.
Newman, H. P., Chicago.
Noble, C. P., Philadelphia.
Nelson, D. T., Chicago.
Noble, G. H., Atlanta, Ga.
O'Connor, F. H., Bellows Falls, Vt.
O'Gorman, F. M., Buffalo.
Phelps, O. S., Battle Creek, Mich.
Pantzer, H. O., Indianapolis, Ind.
Price, A. D., Harrodsburg, Ky.
Pfaff, O. G., Indianapolis, Ind.
Reed, C. A. L., Cincinnati.
Ritchie, P., St. Paul, Minn.
Ricketts, E., Cincinnati.
Rolerfort, G. W., Newark, N. J.
Rosenthal, M. I., Ft. Wayne, Ind.
Reese, F. DeW., Cortland, N. Y.
Regar, H. K., Philadelphia.
Richardson, E. M., Camden, N. J.
Simpson, F. F., Pittsburg, Pa.
Skinner, C. A., Monmouth, Ill.

Still, D. V., Johnstown, N. Y.
Simmons, G. H., Chicago.
Strobell, C. W., Rutland, Vt.
Swan, W. E., Saratoga Springs N. Y.
Tompkins, C., Richmond, Va.
Taylor, C. M., Columbus, O.
Tucker, W. L., Hinsdale, Mass.
Taylor, W. G., Buffalo.
Theinhaus, C. O., Milwaukee, Wis.
Van Etten, N. B., New York.
Wathen, W. H., Louisville, Ky.
Walker, E., Evansville, Ind.
Werder, X. O., Pittsburg, Pa.
Wiggin, F. H., New York.
Wilson, J. T., Sherman, Texas.
Watkins, T. J., Chicago.
Wall, C. A., Buffalo.
Wiley, F. S., Fond du Lac, Wis.
Williams, R., Pittsburg, Pa.
Wormley, J. A., Newark, N. J.
Waterman, H. L., Brattleboro, Vt.
Yarbrough, L. A., Covington, Tenn.

Section on Surgery and Anatomy.

Andrews, E. W., Chicago.
Andrews, J. W., Mankato, Minn.
Adler, L. H., Jr., Philadelphia.
Allen, D. P., Cleveland.
Amerland, J. H., St. Louis.
Ashby, A. A., Red Oak, Iowa.
Ayres, D., Fort Plain, N. Y.
Anderson, C. G., Detroit, Mich.
Bryan, W., New York.
Blake, J. D., Baltimore, Md.
Bodine, J. A., New York.
Beodu, A. D., Chicago.
Bradshaw, J. H., Orange, N. J.
Blose, J. U., Altoona, Pa.
Best, E. G., Greenfield, Mass.
Bishop, W. L., Bay City, Mich.
Bell, G. F., Newberry, Pa.
Bullitt, J. B., Louisville.
Bentley, E., Little Rock, Ark.
Brant, A. C., Canton, Ohio.
Barger, R. N., Hopedale, Ill.
Broome, G. W., St. Louis, Mo.
Baldwin, S. C., Salt Lake City.
Bachman, J. S., Bristol, Tenn.
Bacon, L. C., St. Paul, Minn.
Bacon, W. F., York, Pa.
Bailey, C. H., Bloomfield, N. J.
Barnes, B. F., Hemlock, Ohio.
Barton, L. G., Willsboro, N. Y.
Batchelor, W. A., Milwaukee, Wis.
Beach, W. M., Pittsburg, Pa.
Beck, C., New York.
Berteling, J. B., South Bend, Ind.
Biggam, W. H., Brooklyn.
Bishop, W. T., Harrisburg, Pa.
Blasucci, E., New York.
Bloodgood, J. C., Baltimore.
Bosher, L. C., Richmond, Va.
Bontecou, R. B., Troy, N. Y.
Bowen, A. B., Maquoketa, Ia.
Brandebury, H. A., Huntington, W. Va.
Brannon, L., Joliet, Ill.
Brant, E. D., Canton, Ohio.
Brayton, C. E., Stonington, Conn.
Brinkmann, L., Philadelphia.
Brodie, B. P., Detroit.
Brownell, F. V., Canajoharie, N.Y.
Brumbaugh, A. B., Huntingdon, Pa.
Bryant, J. D., New York.
Carmalt, W. H., New Haven, Conn.
Crile, G. W., Cleveland.
Cutler, A. W., Oneonta, N. Y.
Cooke, C. P., New Albany, Ind.
Christie, G. R., Long Prairie, Minn.
Coffey, R. C., Portland, Ore.
Carpenter, H. W., Oneida, N. Y.
Carmany, H. S., Philadelphia.
Cook, G., Concord, N. H.
Conner, M. C., Middletown, N. Y.
Carr, W. P., Washington, D. C.
Connell, F. G., Leadville, Colo.
Collings, S. P., Hot Springs, Ark.
Crane, A. A., Waterbury, Conn.
Castle, F. E., Waterbury, Conn.
Cox, W. C., Everett, Wash.
Comstock, F. E., Wellsville, N. Y.
Comstock, G. F., Saratoga Sprgs.
Cabot, A. T., Boston.
Coover, F. W., Harrisburg, Pa.
Creveling, J. P., Auburn, N. Y.
Crain, M. R., Rutland, Vt.
Cook, G. J., Indianapolis.
Cannaday, C. G., Roanoke, Va.
Crouse, D. W., Waterloo, Iowa.
Carson, N. B., St. Louis, Mo.
Chambers, J. W., Baltimore, Md.
Cheeseman, B. C., Watertown, N. Y.
Carlow, C. M., Minneapolis.
Cheeseman, W. S., Auburn, N. Y.
Dick, A. J., Watertown, N. Y.
Dibrell, J. R., Little Rock, Ark.
Daugherty, C. A., So. Bend, Ind.
Dewitt, J. P., Canton, O.
Dunn, J. H., Minneapolis.
Donoghue, F. D., Boston.
Davis, B. B., Omaha, Neb.
Dibrell, J. A., Little Rock, Ark.
Drake, H. H., Norristown, Pa.
Dickinson, W. L., Saginaw, Mich.
Dickson, J. A., Ashtabula, Ohio.
Dunsmore, F. A., Minneapolis.
Dallas, A., Bayonne, N. J.
DeGarmo, W. B., New York.
Dorr, E. E., Des Moines, Iowa.
Davis, T. G., Bridgeton, N. J.
Dawbarn, R. H. M., New York.
Dorland, W. L., Pueblo, Colo.
Edwards, T. C., Salinas, Cal.
Eckley, W. T., Chicago.
Estes, W. L., S. Bethlehem, Pa.
Essig, N. F., Spokane, Wash.
Earles, W. H., Milwaukee.
Earle, S. T., Baltimore.
Evans, G. B., Dayton, Ohio.
Ewing, W. A., Dayton, O.
Eisenberg, P. Y., Norristown, Pa.
Felty, J. W., Hartford, Conn.
Fairchild, D. S., Jr., Clinton, Ia.
Fairchild, T., Clinton, Ia.
Fuller, E., New York.
Fenno, H. M., Rochester, N. Y.
Ferguson, A. H., Chicago.
Fritts, C. E., Hudson, N. Y.
Fairbank, A. W., Chazy, N. Y.
Frank, J., Chicago.
Fithian, J. W., Camden, N. J.
Gordon, S. C., Portland, Me.
Greenwalt, G. L., Ft. Wayne, Ind.
Green, G. W., Chicago.
Grim, A., Franklin Grove, Ill.
Guthrie, G. W., Wilkesbarre, Pa.
Guthrie, W. A., Franklin, Ky.
Grad, H., New York.
Gleason, A. R., Keene, N. H.
Gordon, S. B., Salinas, Cal.
Gibbons, R. H., Scranton, Pa.
Goodhue, Dayton, Ohio.
Grant, W. W., Denver, Colo.
Graham, D. W., Chicago.
Graves, W. B., East Orange, N. J.
Gregory, L. L., Chicago.
Grant, H. H., Louisville, Ky.
Guthrie, J. R., Dubuque, Ia.
Gumaer, A. G., Buffalo.
Guiteras, Ramon, New York.
Guthrie, A., Prescott, Ark.
Goodridge, E. A., New York.
Halsted, A. E., Chicago.
Hudspeth, G. W., Little Rock, Ark.
Haubold, H. A., New York.
Hobbs, W. A., E. Liverpool, Ohio.
Holmes, B., Chicago.
Hollingshead, E., Pemberton, N. J.
House, A. F., Cleveland.
Hall, W. A., Minneapolis.
Haynes, I. S., New York.
Haines, W. D., Cincinnati.
Hatch, H., Quincy, Ill.
Halsey, L. M., Williamstown, N. J.
Hall, J. C., Anguilla, Miss.
Holden, T. N., New York.
Haecker, L. E., Hampton, Ia.
Hamilton, W. D., Columbus, O.
Henkel, A. M., Staunton, Va.
Hammond, F. P., New York.
Houston, D. W., Troy, N. Y.
Hotchkiss, L. W., New York.
Hafford, G. C., Albion, Mich.
Horsley, J. S., El Paso, Tex.
Huselton, W. S., Pittsburg, Pa.
Harris, M. L., Chicago.
Hawley, D. C., Burlington, Vt.
Hessert, W., Chicago.
Irish, R. H., Troy, N. Y.
Irwin, J. R., Washington, Pa.
Johnson, M. M., Hartford, Conn.
Jaeger, Chas., Denver, Colo.
Jacobson, J. H., Toledo, Ohio.
Jacobson, N., Syracuse, N. Y.
Janes, G. H., Westfield, Mass.
Johnson, E. A., Danville, Ill.
Johnston, G. B., Richmond, Va.
Jackson, C. M., Columbia, Mo.
Jackson, R. W., Fall River, Mass.
Johnson, W. D., Batavia, N. Y.
Jepson, W., Sioux City, Ia.
Johnston, W., Colfax, Wash.
Kurtz, C., Los Angeles, Cal.
Kassabian, M. K., Philadelphia.
Kieffer, A. R., St. Louis, Mo.
Keller, L., Ironton, O.
Klump, J. A., Williamsport, Pa.
Knight, W., Cincinnati.
Kelly, J. G., Hornellsville, N. Y.
Keefe, J. W., Providence, R. I.
Kerr, A. A., Salt Lake, Utah.
Kreider, G. N., Springfield, Ill.
Krouse, L. J., Cincinnati.
Kendall, F. D., Columbia, S. C.
Laws, W. V., Philadelphia.
LeBoutillier, W. G., New York.
Larimore, F. C., Mt. Vernon, Ohio.
Linville, M., New Castle, Pa.
Lydston, G. F., Chicago.
Loder, P. E., Philadelphia.
Liddle, F. C., Dorset, Vt.
Latta, A. F., Graysville, Ohio.
Latta, S. W., Philadelphia.
Loughran, F. W., New York.
Lord, J. P., Omaha, Neb.
Levings, A. H., Milwaukee, Wis.
Long, J. W., Bryan, Ohio.
Lapiace, E., Philadelphia.
Laidley, L. H., St. Louis, Mo.
Langfitt, W. J., Allegheny, Pa.
Lyman, J. V. R., Eau Claire, Wis.
Leonard, C. L., Philadelphia.
Long, F. F., Chester, Pa.
Lowman, W. B., Johnstown, Pa.
Ledlie, J. B., Saratoga Springs N. Y.
Lobingier, A. S., Los Angeles, Cal.
Lutz, F. J., St. Louis, Mo.
Lyon, E. B., New Britain, Conn.
Manley, T. H., New York.
Myers, J. F., Sodus, N. Y.
Martin, C. F., Philadelphia.
Morrow, W. F., Kansas City, Mo.
Marshall, V. A., Moriah, N. Y.
McCullough, A. H., Mansfield, O.
McKenna, J. A., Lansdowne, Pa.
Marshall, N. M., Portland, Me.
McIntosh, T. M., Thomasville, Ga.
Maury, J. W. D., New York.
McOscar, E. J., Ft. Wayne, Ind.
McRae, F. W., Atlanta, Ga.
Moore, J. E., Minneapolis.
Means, W. J., Columbus, O.
McKnight, E. J., Hartford, Conn.
Mahon, J. B., Pittston, Pa.
Maxwell, T. J., Keokuk, Ia.
McKinnon, M. J., York, Pa.
Murray, T. J., Butte, Mont.
Mayo, W. J., Rochester, Minn.
McNutt, G. C., Bath, N. Y.
Morton, A. W., San Francisco.
McGraw, T. A., Detroit.
Marion, H. E., Boston.
McCuistion, L. P., Paris, Tex.
McDonnell, O., Lowell, Mich.
Marsh, W. H., Solomon, Md.
Marsh, J. P., Troy, N. Y.
McCabe, W. F., Beloit, Wis.
Moriarta, D. C., Saratoga Sprgs.
McNicholl, T. A., New York.
Martin, T. C., Cleveland.
Mackie, W., Milwaukee, Wis.
Miller, S. R., Knoxville, Tenn.
Munro, J. C., Boston.
Michler, H. D., Easton, Pa.
Murrays, B. N., Flint, Mich.
Mathews, J. M., Louisville, Ky.
Marcy, H. O., Jr., Boston.
Miller R. E. L., Ft. Worth, Tex.
Miles, R. G., New Castle, Pa.
McChord, R. C., Lebanon, Ky.
Murphy, J. B., Chicago.
Nuzum, T. W., Brodhead, Wis.
Newton, LeR., A., Greenfield, Mass.
Nead, D. W., Philadelphia.
Nicholson, W. G., Green Bay, Wis.
Newell, M. A., Sheridan, Wyo.
Osborn, E. B., Cleburne, Texas.
Owsley, P. O., Chicago.
Ochsner, A. J., Chicago.
Osborne, H. B., Kalamazoo, Mich.
Oliver, J. C., Cincinnati.
Price, J. C., Scranton, Pa.
Parkhill, C. S., Hornellsville, N.Y.
Pultz, M. T., Stanford, N. Y.
Platt, W. N., Shoreham, Vt.
Palmer, E. A., Saratoga Springs.
Porter, M. F., Ft. Wayne, Ind.
Pollmann, L. P., St. Louis.
Pierson, F. H., Elizabeth, N. J.
Payne, G. W., Bardwell, Ky.
Pettit, A., Elizabeth, N. J.
Pierce, A., New Bedford, Mass.
Paschal, F., San Antonio, Tex.
Preston, J. L., Kingston, N. Y.
Peyton, D. C., Jeffersonville, Ind.
Perkins, I. B., Denver, Colo.
Prouty, Ira J., Keene, N. H.
Plummer, C. G., Salt Lake City.
Pennington, J. R., Chicago.
Peek, J. M., Arlington, Ky.
Peacock, A., Chicago.
Pattison, W. E., Westport, N. Y.
Quinn, S. T., Elizabeth, N. J.
Ryan, G. N., Des Moines, Ia.
Reid, W. B., Rome, N. Y.
Runyan, J. P., Little Rock, Ark.
Ricketts, B. M., Cincinnati.
Rock, H. J., Aberdeen, S. D.
Richards, W. M., Joliet, Ill.
Rowe, G. D., Boone, Ia.
Reilly, J. P., Elizabeth, N. J.
Rodman, W. L., Philadelphia.
Ruth, C. E., Keokuk, Ia.
Reyburn, R., Washington, D. C.
Reed, R. H., Rock Springs, Wyo.
Resseguie, F. J., Saratoga Sprgs.
Ragan, O. H. W., Hagerstown, Md.
Robbins, F. W., Detroit.
Ransohoff, J., Cincinnati.
Roberts, J. B., Philadelphia.
Roth, H. C., New York.
Rixford, E., San Francisco, Cal.
Roberts, W. O., Louisville.
Swanick, J. R., Saratoga Springs, N. Y.
Stewart, F. T., Philadelphia.
Stone, M. T., Troy, N. H.
Steele, A. J., St. Louis, Mo.
St. John, D., Hackensack, N. J.
Small, A. H., Riverside, N. J.
Schneider, L. B., Troy, N. Y.
Shuttee, H. C., El Reno, Okla.
Sayre, R. H., New York.
Seymour, W. W., Troy, N. Y.
Summers, J. E., Omaha, Neb.
Somberger, S. J., Cortland, N. Y.
Sweetser, H. B., Minneapolis.
Smith, E. R., Los Angeles, Cal.
Stillwell, A. L., Somerville, N. J.
Smith, F. G., Somerville, Mass.
Solter, H. C., Huntington, W. Va.
Sherman, H. M., San Francisco.
Smith, S., New York.
Schlueter, R. E., St. Louis.
Spear, J. W., Mason City, Ill.
Spitzley, W. A., Detroit.
Shedd, G. H., Conway, N. H.
Sullivan, J. D., Brooklyn.
Straight, A. M., Bradford, Pa.
Stetson, H. G., Greenfield, Mass.
Sutton, E. M., Peoria, Ill.
Sanford, W. H., Saratoga Springs, N. Y.
Smith, A. C., Portland, Ore.
Swartz, T. B., Chicago.
Sullivan, T. J., Chicago.
Stamm, M., Fremont, O.
Syms, Parker, New York.
Smith, O. C., Hartford, Conn.
Scofield, W. K., Washington, D. C.
Swan, C. F., Chicago.
Tanquary, J. H., St. Louis, Mo.
Thompson, J. G., Angola, N. Y.
Thomson, C. E., Scranton, Pa.
Tuttle, J. P., New York.
Tinker, M. B., Baltimore.
Tupper, V. L., Bay City, Mich.
Tibbals, F. B., Detroit, Mich.
Talley, D. F., Birmingham, Ala.
Taylor, H. L., New York.
Thomas, E. W., San Francisco.
Taulbee, J. B., Mayville, Ky.
Townsend, W. R., New York.
Tobias, A. W., Elwood, Ind.
Thompson, C. O., Boston.
Valentine, F. C., New York.
Vander Laan, J., Muskegon, Mich.
Van Kirk, B. H., West Newton, Pa.
Vance, A., Louisville, Ky.
Whitacre, H. J., Cincinnati.
Walker, A. B., Canton, O.
Willard, DeF., Philadelphia.
Wright, A. L., Carroll, Ia.
Wiggin, J. L., East St Louis, Ill.
Wishard, W. N., Indianapolis.
Warner, F., Columbus, O.
Wear, I. N., Fargo, N. D.
Weeks, S. H., Portland, Me.
Wyeth, J. A., New York.
Winslow, R., Baltimore.
Wilson, W. E., Pawtucket, R. I.
Wakeman, B. R., Hornellsville, N. Y.
Walker, H. O., Detroit.
Willis, P. W., Seattle, Wash.
Welch, W. B., Fayetteville, Ark.
Wagoner, G. W., Johnstown, Pa.
Walch, C. J., Syracuse N. Y.
Williamson, G. L., Homer, Ill.
Weir, R. F., New York.
Ware, M. W., New York.
Wright, I. W., Bridgeport, Conn.
Waddey, E. J., Waterloo, Iowa.
Wade, D. C., Holly, Mich.
Westmoreland, W. F., Atlanta, Ga.
Yocom, J. R., Tacoma, Wash.
Young, H. H., Baltimore.

Section on Hygiene and Sanitary Science.

Appel, D. M., Ft. Bayard, N. M.
Bailhache, P. H., Stapleton, N. Y.
Bonney, S. G., Denver, Colo.
Biggs, H. M., New York.
Bracken, H. M., Minneapolis.
Egbert, S., Philadelphia.
Fronczak, F. E., Buffalo.
Gorgas, W. C., Havana, Cuba.
Holmes, A. M., Denver, Colo.
Johnson, C. B., Champaign, Ill.
Jaques, W. K., Chicago.
Knopf, S. A., New York.
Learned, J. B., Northampton, Mass.
Lindsley, C. A., New Haven, Conn.
Lee, B., Philadelphia.
Montgomery, L. H., Chicago.

McCormack, J. N., Bowling Green, Ky.
Mitchell, H., Asbury Park, N. J.
Minor, C. L., Asheville, N. C.
Moore, B. S., Syracuse, N. Y.
Nagle, J. T., New York.
Reynolds, A. R., Chicago.
Spalding, H., Chicago.
Stubbert, J. E., New York.
Sanders, W. H., Mobile, Ala.
Suiter, A. W., Herkimer, N. Y.
Stearns, B. W., Binghamton, N. Y.
Ward, R. H., Troy, N. Y.
Wyman, Walter, Washington, D. C.
Wende, E., Buffalo.

Section on Ophthalmology.

Allport, F., Chicago.
Appleby, E. V., St. Paul, Minn.
Angell, W. A., Muncie, Ind.
Ayres, S. C., Cincinnati.
Baker, C. H., Bay City, Mich.
Bennett, P. R., Daytonia, Fla.
Bennett, A. G., Buffalo.
Bennett, M. R. B., New York.
Baker, A. R., Cleveland.
Ball, O. F., St. Louis, Mo.
Burrows, L., Jr., Buffalo.
Bullard, W. L., Columbus, Ga.
Bulson, A. E., Jr., Ft. Wayne, Ind.
Beil, E. S., Chicago.
Beck, Joseph C., Chicago.
Blaine, M. D., Auburn, N. Y.
Briggs, H. H., Asheville, N. C.
Bates, W. H., New York.
Black, N. M., Milwaukee, Wis.
Brown, J. E., Columbus, Ohio.
Bullard, T. E., Schuylerville, N. Y.
Burnett, S. M., Washington, D. C.
Chisholm, F. N., Baltimore.
Chambers, T. R., Jersey City, N. J.
Connor, L., Detroit.
Craig, A. R., Columbia, Pa.
Culver, C. M., Albany, N. Y.
Case, G. M., Elmira, N. Y.
Cady, G. M., Nichols, N. Y.
Cannaday, A. A., Roanoke, Va.
Collins, H., Duluth, Minn.
Colburn, J. E., Chicago.
Dennis, D., Erie, Pa.
de Schweinitz, G. E., Philadelphia.
Dickinson, F., Chicago.
Dudley, W. H., Easton, Pa.
Dunn, I. J., Erie, Pa.
Ellett, E. C., Memphis, Tenn.
Ellis, H. B., Los Angeles, Cal.
Fleming, G. K., Baltimore.
Faith, T., Chicago.
Friedenwald, H., Baltimore.
Frey, C. L., Scranton, Pa.
Frankhauser, F. W., Reading, Pa.
Gould, G. M., Philadelphia.
Gardiner, E. J., Chicago.
Gorham, G. H., Bellows Falls, Vt.
Griffith, Monte, Washington, D. C.
Grove, B. H., Buffalo.
Greenwood, A., Boston.
Harrison, W. G., Talladega, Ala.
Hiers, J. L., Savannah, Ga.
Higgins, F. W., Cortland, N. Y.
Hepburn, N. J., New York.
Hager, W. A., South Bend, Ind.
Herron, J. T., Jackson, Tenn.
Hansell, H. F., Philadelphia.
Hancock, J. C., New York.
Holmes, C. R., Cincinnati.
Howe, L., Buffalo.
Holt, E. E., Portland, Me.
Hubbell, A. A., Buffalo.
Jackson, E., Denver, Colo.
Keiper, G. F., Lafayette, Ind.
Keyes, J. J., Brooklyn.
Kipp, C. J., Newark, N. J.
Knapp, H., New York.
Kukendall, J. S., Ithaca, N. Y.
Klinedinst, J. F., York, Pa.
Ledbetter, S. L., Birmingham, Ala.
Lippincott, J. A., Pittsburg, Pa.
Love, L. F., Philadelphia.
Lautenbach, L. J., Philadelphia.
Louchery, D. C., Clarksburg, W. Va.
Lewis, F. P., Buffalo.
Lewis, E. J., Sauk Center, Minn.
McIntire, C., Easton, Pa.
McAuliffe, G. N., New York.
Minney, J. E., Topeka, Kan.
Moulton, W. B., Portland, Me.
Morris, C. D., Pontiac, Mich.
Moore, T. W., Huntington, W. Va.
McReynolds, J. O., Dallas, Tex.
Marple, W., New York.
Muncask, S. B., Washington, D. C.
Mitchell, S., Hornellsville, N. Y.
Mahoney, G. W., Chicago.
Miller, E. O., Aberdeen, S. D.
Meyer, J. H. W., LaPorte, Ind.
Parker, W. R., Detroit, Mich.
Pyle, W. L., Philadelphia.
Prefontaine, L. A., Springfield, Mass.
Rogers, F. T., Providence, R. I.
Raub, J. F., Washington, D. C.
Ring, H. W., New Haven, Conn.
Rodman, C. S., Waterbury, Conn.
Randolph, R. L., Baltimore.
Risley, S. D., Philadelphia.
Shute, D. K., Washington, D. C.
Schoch, L. E., Shamokin, Pa.
Shorter, J. H., Macon, Ga.
Sweet, W. M., Philadelphia.
Sherman, H. G., Cleveland.
Smith, F. A., Troy, N. Y.
Stevens, C. L., Athens, Pa.
Standish, M., Boston.
Starr, E. G., Buffalo.
Stevenson, M. D., Akron, Ohio.
Smith, F. K., Warren, Ohio.
Starkey, H. M., Chicago.
Savage, G. C., Nashville, Tenn.
Suker, G. F., Chicago.
Sturtevant, J. R., Theresa, N. Y.
Thigpen, C. A., Montgomery, Ala
Todd, F. C., Minneapolis, Minn.
Tenney, J. A., Boston.
Taylor, L. H., Wilkesbarre, Pa.
Veasey, C. A. Philadelphia.
Voorhees, S., Elmira, N. Y.
Wilder, W. H., Chicago.
Wilson, N. L., Elizabeth, N. J.
Woodruff, H. W., Joliet, Ill.
Würdemann, H. V., Milwaukee.
Weeks, J. E., New York.
Woodward, J. H., New York.
Wood, C. A., Chicago.
Wickware, M. M., Saratoga Sprgs.
Woods, Hiram, Baltimore.
Williams, C. H., Boston, Mass.
Wiener, M., St. Louis, Mo.
Woodruff, T. A., Chicago.
Young, H. B., Burlington, Ia.
Zeigler, S. L., Philadelphia.

Section on Diseases of Children.

Abt, I. A., Chicago.
Apple, S. S., Easton, Pa.
Biechele, R. A., Canton, O.
Brush, E. F., Mt. Vernon, N. Y.
Brown, H. W., Waterloo, Ia.
Coit, H. L., Newark, N. J.
Cosner, P. H., Bladensburg, O.
Cotton, A. C., Chicago.
Cook, J. C., Chicago.
Cochran, J. L., Star Junction, Pa.
Colton, A. J., Buffalo.
Curtis, P. C., Round Lake, N. Y.
Dodson, J. M., Chicago.
Davidson, K. M., Boston.
Darnall, W. E., Atlantic City, N. J.
Dennis, G. J., Chicago.
Engelmann, R., Chicago.
Fischer, L., New York.
Freudenthal, W., New York.
Griffith, J. P. C., Philadelphia.
Hedges, B. V. D., Plainfield, N. J.
Hollopeter, W. C., Philadelphia.
Irwin, V. J., Springfield, Mass.
Knipe, R., Norristown, Pa.
Kofron, J. V., Cleveland.
Kerby, C. G., New York.
Kelley, S. W., Cleveland.
Love, I. N., New York.
Ludlow, O. C., New York.
Magruder, W. E., Baltimore.
McAlister, A., Camden, N. J.
McClanahan, H. M., Omaha, Neb.
Morse, J. L., Boston.
Plessner, L., Bay City, Mich.
Rosenthal, E., Philadelphia.
Rotch, T. M., Boston.
Snyder, A. E., New Milford, Pa.
Small, E. H., Pittsburg, Pa.
Seward, W. M., New York.
Shelly, E. T., Atchison, Kan.
Wahrer, C. F., Ft. Madison, Iowa.
Welch, W. M., Philadelphia.
Weiner, F. W., Joliet, Ill.
Walis, F. X., Chicago.

Section on Stomatology.

Andrews, R. R., Cambridge, Mass.
Baldwin, A. E., Chicago.
Brown, G. V. I., Milwaukee.
Bogue, E. A., New York.
Chittenden, C. C., Madison, Wis.
Eames, G. F., Boston.
Greenfield, E. J., Toledo, Ohio.
Latham, V. A., Chicago.
Peck, A. H., Chicago.
Rhein, M. L., New York.
Talbot, E. S., Chicago.
Williams, J. L., Boston.

Section on Nervous and Mental Diseases.

Becker, E. W., Troy, N. Y.
Brower, D. R., Chicago.
Brown, S., Chicago.
Burr, C. B., Flint, Mich.
Barstow, J. M., Council Bluffs, Ia.
Carpenter, E. G., Columbus, O.
Collins, J., New York.
Crothers, T. D., Hartford, Conn.
Cook, G. F., Oxford, Ohio.
Caples, B. M., Waukesha, Wis.
Dewey, R., Wauwatosa, Wis.
Dunham, S. A., Buffalo, N. Y.
Dunning, A. W., St. Paul, Minn.
Eshner, A. A., Philadelphia.
Gasser, H., Platteville, Wis.
Gleason, A. A., Buffalo.
Gordinier, H. C., Troy, N. Y.
Gundry, R. F., Catonsville, Ind.
Herdman, W. J., Ann Arbor, Mich.
Hill, S. S., Wernersville, Pa.
Hoppe, H. H., Cincinnati.
Hughes, C. H., St. Louis.
Illings, W. P., Little Rock, Ark.
Jewett, F. B., Howard, R. I.
Jelliffe, S. E., New York.
King, J. K., Watkins, N. Y.
Keniston, J. M., Middleton, Conn.
Leszynsky, W. M., New York.
Lloyd, J. H., Philadelphia.
Moyer, H. N., Chicago.
Mills, C. K., Philadelphia.
McBride, J. H., Pasadena, Cal.
McCarthy, D. J., Philadelphia.
McGaughey, H. F., Winona, Minn.
Pressey, A. J., Cleveland.
Preston, R. J., Marion, Va.
Pearce, F. S., Philadelphia.
Redlich, H., Chicago.
Ruedy, R. E., Pleasantville, N. Y.
Richardson, A. B., Washington, D. C.
Rodebaugh, H. A., Columbus, O.
Robinson, W. D., Philadelphia.
Rhein, J. H. W., Philadelphia.
Sights, H. P., Paducah, Ky.
Sweeney, A., St. Paul, Minn.
Searcy, J. T., Tuscaloosa, Ala.
Shanahan, W. T., Sonyea, N. Y.
Spratling, W. P., Sonyea, N. Y.
Strong, S. E., Saratoga Springs.
Tomlinson, H. A., St. Peter, Minn.
Walker, C. S., Concord, N. H.
Witte, M. E., Clarinda, Ia.

Section on Cutaneous Medicine and Surgery.

Allen, C. W., New York.
Anthony, H. G., Chicago.
Bradford, G. D., Homer, N. Y.
Bulkley, L. D., New York.
Campbell, R. R., Chicago.
Carlett, W. T., Cleveland.
Cocks, E. L., New York.
Firman, F. W., Findlay, O.
Gottheil, W. S., New York.
Hartzell, M. B., Philadelphia.
Heidingsfeld, M. L., Cincinnati.
Lieberthal, D., Chicago.
Montgomery, F. H., Chicago.
Pusey, W. A., Chicago.
Ravogli, A., Cincinnati.
Schamberg, J. F., Philadelphia.
Schmidt, L. E., Chicago.
Sherwell, S., Brooklyn.
Stelwagon, H. W., Philadelphia.
Swarts, G. T., Providence, R. I.
Varney, H. R., Detroit.
Varney, M. V., Saratoga Springs.
Weiss, L., New York.
Wallis, J. F., Philadelphia.
Wende, G. W., Buffalo.

Section on Laryngology and Otology.

Allport, H. W., Chicago.
Allen, T. G., Buffalo.
Andrews, A. H., Chicago.
Allens, J. B., Syracuse, N. Y.
Abraham, J. H., New York.
Arment, S. B., Bloomsburg, Pa.
Anderson, W. S., Detroit.
Baldwin, K. W., Philadelphia.
Ballenger, W. L., Chicago.
Barnhill, J. F., Indianapolis.
Booth, B. S., Troy, N. Y.
Buckman, E. U., Wilkesbarre, Pa.
Corwin, T. W., Newark, N. J.
Cobb, C. M., Lynn, Mass.
Cryer, M. H., Philadelphia.
Cott, G. T., Buffalo.
Cline, L. C., Indianapolis, Ind.
Denison, C. E., New York.
Delavan, D. B., New York.
DeVilbiss, A., Toledo.
Dickerman, E. T., Chicago.
Dunn, O. B., Ironton, O.
Dean, L. W., Iowa City, Ia.
Dunlap, H. M., Battle Creek Mich.
Fielding, F. G., Glens Falls, N. Y.
Freer, O. T., Chicago.
Gibb, J. S., Philadelphia.
Goldstein, M. A., St. Louis.
Gibbons, P. J., Syracuse, N. Y.
Koyle, F. H., Hornellsville, N. Y.
Kuyk, D. A., Richmond, Va.
Levy, R., Denver, Colo.
Lutz, S. H., Brooklyn.
Myles, R. C., New York.
Mayer, E., New York.
Makuen, G. H., Philadelphia.
Malsbary, G. E., Cincinnati.
McDonald, D. J., New York.
Packard, F. R., Philadelphia.
Payne, C. S., Liberty, N. Y.
Pierce, N. H., Chicago.
Robinson, C. M., Chicago.
Richards, G. L., Fall River, Mass.
Randall, B. A., Philadelphia.
Pynchon, E., Chicago.
Stucky, J. A., Lexington, Ky.
Stueber, F. G., Lima, Ohio.
Snow, S. F., Syracuse, N. Y.
Stout, G. C., Philadelphia.
Shurly, E. L., Detroit, Mich.
Theisen, C. F., Albany, N. Y.
Warder, C. B., Philadelphia.
Wheelock, K. K., Ft. Wayne, Ind
Woollen, G. V., Indianapolis, Ind.

Section on Materia Medica, Pharmacy and Therapeutics.

Baer, A. W., Chicago.
Borden, D. P., Paterson, N. J.
Butler, G. F., Alma, Mich.
Benedict, A. L., Buffalo.
Burdick, A. S., Chicago.
Clements, H. J., New Orleans, La.
Chamberlin, C. S., Cincinnati.
Dickerson, W. L., St. Louis, Mo.
Hubbard, G. W., Nashville, Tenn.
Hakes, S. P., Tioga, Pa.
Hayes, I. B., Florence, Mass.
Heilbrun, L. M., New York.
Hill, W. B., Milwaukee.
Hallberg, C. S. N., Chicago.
Hill, J. S., Bellows Falls, Vt.
Kleiner, M., Denver, Colo.
Lyons, A. B., Detroit.
Miller, A. E., Needham, Mass.
Murray, R. D., Key West, Fla.
Osborne, O. T., New Haven, Conn.
Putney, J., Charleston, W. Va.
Reilly, T. F., New York.
Robinson, W. J., New York.
Schweitzer, J., New York.
Stucky, T. H., Louisville, Ky.
Slack, H. R., LaGrange, Ga.
Stevens, A. A., Philadelphia.
Sweeting, C. B. Key West, Fla.
Takamine, J., New York.
Tompkins, W. W., Charleston, W. Va.
Ward, F. F., New York.
Walsh, C. C., Merrill, Wis.
Woodbury, F., Philadelphia.
Webb, C. W., Wellsboro, Pa.
Wheatley, F. G., North Abington, Mass.

Section on Physiology and Pathology.

Ager, L. C., Brooklyn.
Becker, W., Milwaukee, Wis.
Beates, H., Jr., Philadelphia.
Dunham, E. K., New York.
Emmerson, H. C., Springfield, Mass.
Evans, W. A., Chicago.
Finder, W., Jr., Troy, N. Y.
Gaylord, H. R., Buffalo.
Graham, H. G., Chicago.
Hall, W. S., Chicago.
Jack, G. N., Depew, N. Y.
Jeffries, F. M., New York.
Kotz, A. L., Easton, Pa.
LeCount, E. R., Chicago.
Loeb, L., Chicago.
McClintock, C. T., Detroit, Mich
McFarland, J., Philadelphia.
Mewborn, A. D., New York.
Newcomet, W. S., Philadelphia.
O'Brien, J. E., Scranton, Pa.
Ravenel, M. P., Philadelphia.
Rosenau, M. J., Washington, D. C.
Smith, C. A., Atlanta, Ga.
Ward, H. B., Lincoln, Neb.
Wesbrook, F. F., Minneapolis
Wilbur, R. L., Stanford University, Cal.
Williams, E. G., Richmond, Va.
Welch, W. H., Baltimore.
Wynn, F. B., Indianapolis, Ind.

Other **Registrations, No Section Being Specified.**

Alexander, H. M., Marietta, Pa.
Bullard, W. D., New York.
Brooks, J. M., Newell, Iowa.
Brown, E. M., Sheldon, Vt.
Deaver, J. B., Philadelphia.
Davis, W. H. K., E. Orange, N. J.
Denison, E., New York.
Fish, G. H., Saratoga Springs.
Ferguson, B. W., Beemerville, N. J.
Gravatt, E. J., Troy, N. Y.
Gnichtel, A. L., New York.
Guest, J. W., Louisville, Ky.
Hogeboom, W. L., Troy, N. Y.
Hutchison, J. C., Troy, N. Y.
Howat, W. F., Hammond, Ind.
Horn, J. A., Mauch Chunk, Pa.
Heenan, R. A., Sandy Hill, N. Y.
Hutchinson, C., Portland, Me.
Kutnow, J., New York.
Kober, G. M., Washington, D. C.
Kearney, J. H., Fitchburg, Mass
Kathen, D. R., Corinth, N. Y.
Martin, R. S., Stuart, Va.
Meserve, A. K. P., Portland, Me.
Macdonald, J., Jr., New York.
Park, J. T., Sandy Hill, N. Y.
Parker, M. G., Lowell, Mass.
Parent, J. S., Birchton, N. Y.
Rich, G. C., Sioux City, Iowa.
Robin, A., Newark, Del.
Shisler, W., Boston.
Simmons, H. M., Baltimore.
Shaw, C. E., Hoosick Falls, N. Y.
Sweetman, J. T., Jr., Ballston Spa, N. Y.
Salter, A., Lena, Ill.
Toms, S. W. S., Nyack, N. Y.
Thompson, A. W., Saratoga Sprgs.
Van Wirt, J. D., Johnsonville, N. Y.
Willson, R., Philadelphia.
Wood, L. C., Poughkeepsie, N. Y.
Young, W. A., Toronto, Ont.
Young, A. M., Salem, N. Y.

Societies.

Ann Arbor (Mich.) Club.—The annual meeting of the Club was held June 23, at which Dr. Reuben Reterson was elected president; Dr. Frederick R. Waldron, vice-president, and Dr. John W. Keating, secretary-treasurer.

Marshall County (Tenn.) Medical Society.—This Society met at Lewisburg, June 27, and elected Dr. W. E. Vaden, Rich Creek, president; Dr. D. L. Gault, Delina, vice-president; Dr. Thomas E. Reed, Lewisburg, secretary, and Dr. Samuel T. Hardison, treasurer.

Manchester (N. H.) Medical Association.—At the meeting of this Association, June 13, Dr. J. Franklin Robinson was elected president; Dr. George D. Towne, vice-president; Dr. Arthur F. Wheat, secretary; Dr. William H. Pattee, treasurer, and Dr. G. Maurice Watson, pathologist.

New York State Medical Association, First District Branch.—The annual meeting of this body was held at Rome, May 21. Dr. Jeremiah R. Sturtevant, Theresa, was elected president; Dr. Henry C. Sutton, Rome, vice-president, and Dr. Edward H. Douglass, Little Falls, secretary and treasurer.

Oneida County (N. Y.) Medical Association.—The annual meeting of this Association was held in Rome, May 21. Dr. John F. FitzGerald, Rome, was elected president; Dr. James W. Douglass, Boonville, vice-president; Dr. J. Orley Stranahan, Rome, secretary, and Dr. John Groman, Utica, treasurer.

Albany (N. Y.) Hospital Association of Graduate Internes.—This Association of ex-internes was organized, June 29, at the Albany Medical College, with the following officers: President, Dr. Clinton B. Herrick, Troy; vice-president, Dr. G. Emory Lochner, Albany, and secretary and treasurer, Dr. Walter H. Conley, Brooklyn.

Monmouth County (N. J.) Medical Society.—At its annual meeting held in Freehold, May 19, this Society elected Dr. William M. Hepburn, Freehold, president; Dr. John H. Van Mater, Atlantic Highlands, vice-president; Dr. D. McLean Forman, Freehold, secretary; Dr. Isaac S. Long, Freehold, treasurer, and Dr. Scudder J. Woolley, Long Branch, reporter.

Dallas (Texas) Medical and Surgical Society.—This Society held its annual meeting, June 28, and elected the following officers for the next year: President, Dr. Emile Aronson; vice-presidents, Drs. Lewis D. Johnson, and William M. Young; secretary, Dr. J. Wilbur Bourland; treasurer, Dr. Frank J. Hall, and judicial council, Drs. George W. B. Swaim, Edward H. Cary and Rufus Whites.

American Climatological Association.—The annual meeting of this Association was held in Los Angeles, Cal., June 9, 10 and 11, President Dr. Samuel A. Fisk, Denver, in the chair. The following officers were elected: Dr. Norman Bridge, Los Angeles, president; Drs. James C. Wilson, Philadelphia, and Henry S. Orme, Los Angeles, vice-presidents, and Drs. Guy Hinsdale, Philadelphia, and Samuel A. Fisk, Denver, councillors.

Elkhorn Valley (Neb.) Medical Society.—This Society held a profitable and pleasant meeting at Norfolk, July 1. In the absence of President Dr. John P. Gilligan, O'Neill, Vice-President Dr. Henry S. Summers, West Point, presided. Ten essayists read papers as per program, and one submitted his essay by the secretary. Two were absent and did not send their manuscripts. The committee on reorganization submitted its report. A general discussion resulted in a resolution which names certain counties contiguous to Norfolk as constituting the territory for a district society, conforming to the A. M. A. scheme. The resolution was accepted and deferred for action at the January, 1903, meeting, when it will come up for adoption as an amendment to the constitution and by-laws.

Colorado State Medical Society.—The thirty-second annual convention was held at Pueblo, June 17, 18 and 19. A resolution was passed at the suggestion of the Canon City Medical Association appealing to the federal government to suppress the advertising matter of patent medicines, which in many cases offended decency. The resolution called for the government to exclude such advertising from the mails. The election of officers resulted as follows: Dr. William W. Grant, Denver, president; Drs. Sol. G. Kahn, Herbert A. Black, Pueblo, and Thomas J. Forhan, Trinidad, vice-presidents; Dr. Minnie C. T. Love, Denver, recording secretary; Dr. J. Tracy Melvin, Saguache, assistant recording secretary; Dr. James M. Blaine, Denver, corresponding secretary, and Dr. William J. Rothwell, Denver, treasurer.

Central District Medical Association.—The physicians of the central district of the Indian Territory met for organization at South McAlester, July 8, and formed an association in conformity with the plan presented by the American Medical Association. Hereafter each applicant for membership in the Indian Territory Medical Association must first become a member of his respective district society. The following officers were elected: Dr. William C. Graves, Hartshorn, president; Dr. George E. Hartshorne, South McAlester, vice-president; Dr. LeRoy Long, Caddo, secretary-treasurer, and a credential committee of three. The Association will meet on the second Tuesday in each quarter, the next meeting being at Durant, October 14. A strong effort will be made properly to organize this district, in order to give the undivided support of the profession to the Choctaw Examining Board which meets at South McAlester on the first Tuesday and Wednesday in each quarter. This board is receiving, as it richly merits, great credit for its earnest work, and in consequence thereof, the Choctaw nation is not what one would consider a pleasure resort for quacks.

National Association of United States Pension Examining Surgeons.—At Saratoga Springs, N. Y., on June 9, this Association was organized. On account of the large number of these surgeons and the peculiarities of their work, the desirability of such an organization has been felt for some time, and several suggestions have been made with this end in view, but no substantial progress was made until the meeting at Saratoga Springs. A large number of enthusiastic examining surgeons was present, a permanent organization was effected, and officers were elected for the coming year. Several interesting papers were presented and, by special invitation, Dr. J. F. Raub, medical referee, read a paper concerning the work of the pension examining surgeons. During the coming year a vigorous and earnest attempt is to be made to interest the 4500 pension examining surgeons in the United States in this organization, and to induce as many as possible to join it. The officers elected for the ensuing year are: President, Dr. William A. Howe, Phelps, N. Y.; vice-presidents, Drs. William H. Hall, Saratoga Springs, N. Y., Cyrus L. Stevens, Athens, Pa., Charles J. Fox, Willimantic, Conn., and G. Law, Greeley, Col.; secretary, Dr. Wheelock Rider, Rochester, N. Y., and treasurer, Dr. Charles H. Glidden, Little Falls, N. Y.

MINNESOTA STATE MEDICAL SOCIETY.

Thirty-fourth Annual Meeting, held in Minneapolis, June 18, 19 and 20, 1902.

President, William A. Hall, M.D., Minneapolis, in the Chair.

Reorganization.

To enable the society to affiliate more closely with the American Medical Association, a reorganization bill was passed based on the constitution and by-laws suggested by this Association for state medical societies.

Reciprocity of Licensure.

In order to make the medical practice acts of Minnesota uniform with those of other states, a resolution was intro-

duced providing that the Committee on Legislation procure the passage of an amendment authorizing the State Board of Medical Examiners to establish reciprocal recognition of licenses with other states whose requirements did not fall below the standard established by Minnesota.

Election of Officers.

The following officers were elected: Dr. John W. Andrews, Mankato, president; Drs. Nathaniel K. Whittemore, Elk River; Mary S. Wretstone, Minneapolis, and Florence C. Baier, Minneapolis, vice-presidents; Dr. Thomas McDavitt, St. Paul, secretary, and Dr. Richard J. Hill, Minneapolis, treasurer.

MEDICAL SOCIETY OF NEW JERSEY.

One Hundred and Thirty-sixth Annual Meeting, held at the New Rudolph Hotel, Atlantic City, June 24 to 26, 1902.

President, Dr. John D. McGill, Jersey City, in the Chair.

President's Address.

The subject of the address was "The Nervous System in Its Relation to Medicolegal Medicine." He began by referring to the progress of the society in recent years, its great age, being the oldest state medical society in the United States, and its conservatism and opposition to all medical heresies. He next called attention to the modern tendency in medicine toward utilitarianism and denounced the sacrifice of the pharmacopeial formulæ for proprietary preparations, and claimed that a renaissance in the practice of medicine in this regard would be beneficial.

State Progress in Hygiene.

DR. EDWARD E. WOEL, chief of the Bureau of Contagious Diseases of the Newark Board of Health, presented a report on "State Progress in Hygiene and Medicine," in which he reported at length the experiments of the board, which would seem to lead to the prevention and cure of tuberculosis; referred to the smallpox epidemic and the conclusions to be deduced therefrom and detailed the efforts to put a stop to the pollution of rivers and to the campaign now carried on by the state against mosquitoes.

Election of Officers.

The following officers were elected: President, Dr. E. L. B. Godfrey, Camden; vice-presidents, Drs. Henry Mitchell, Asbury Park; Addison W. Taylor, Beverley, and Walter B. Johnson, Paterson; corresponding secretary, Dr. Ellis W. Hedges, Plainfield; recording secretary, Dr. William J. Chandler, South Orange, and treasurer, Dr. Archibald Mercer, Newark.

The society will next meet at Asbury Park in June, 1903.

Dr. Charles L. Greene, St. Paul, was appointed section chairman in medicine, Dr. Horatio B. Sweetser, Minneapolis, in surgery, and Dr. A. C. Rogers, Faribault, in hygiene, medical education and public medicine.

The society will hold its 1903 meeting in St. Paul.

ONTARIO MEDICAL ASSOCIATION.

Twenty-second Annual Meeting, held in Toronto, June 4-5, 1902.

The President, Dr. N. A. Powell, Toronto, in the Chair.

Surgery of the Gall-bladder.

DR. ROSWELL PARK, Buffalo, was the guest of the association and contributed a short paper on the surgery of the gall-bladder, dealing particularly with the method of extirpation similar to appendicectomy. Dr. Ingersoll Olmsted, Hamilton, discussed this paper, stating that he had performed Finney's operation in three successful cases.

Transplantation of Omentum.

DR. GEORGE A. PETERS, Toronto, contributed the report of a case in which transplantation of the omentum had been made into the abdominal wall for the relief of ascites due to cirrhosis of the liver. The patient, a man of about 45, was also presented. To illustrate the great decrease in the girth of his patient after operation, Dr. Peters had him draw on a pair of pantaloons he had worn, whose waistband measured sixty-four inches. The patient now seems to be in perfect health.

President's Address.

In his address, the president referred chiefly to recent legislation in the Province and Dominion and to some points in medical ethics. He had felt called on to oppose the Jessop bill for the reform of the Ontario Medical Council. Years ago a fixed and definite plan had been agreed on and definite promises made to the Homeopathic body. The constitution of the Medical Council should not be changed unless with their consent. As to Dr. Roddick's bill for a Dominion medical council, although it had received parliamentary sanction, he did not believe it to be a measure either for much good or much evil.

Medical Testimony.

Hon. Judge MacDougall contributed a valuable paper on "Medical Testimony in Courts of Law." He favored making the expert an assistant or adviser to the court. He referred to the new Canada Evidence Act, which now limits experts to three, or five if asked for before the trial began, which he considered a move in the right direction. He urged physicians to give their testimony in popular and not in technical language.

Clinical Section.

It has been the custom heretofore to have addresses in medicine and surgery at the meetings of this association, but this year they were omitted altogether, and in their place was a section devoted to the presentation of clinical cases. This new departure proved both acceptable and profitable, several most interesting subjects being shown.

Election of Officers.

The officers elected for the ensuing year are: President, Dr. John C. Mitchell, Enniskillen; vice-president, Dr. George A. Bingham, Toronto; secretary, Dr. Harold C. Parsons, Toronto, and treasurer, Dr. Andrew R. Gordon, Toronto.

MICHIGAN STATE MEDICAL SOCIETY.

Thirty-seventh Annual Meeting, held at Port Huron, June 26 and 27, 1902.

President, Leartus Connor, M.D., Detroit, in the Chair.

President's Address.

In his annual address the president asserted that the society has in reality a past of 83 years, with but two short breaks, and that the society had been in existence since 1819. He dwelt on the influence of early physicians in establishing methods at the State University which have made that institution a power in medical education. He also made recommendations for reorganization, for greater perfection in the working of the society, for the establishment of a roll of honor for veteran members and for the establishment of a monthly journal.

Reorganization.

DR. A. E. BULSON, Jackson, reported for the Committee on Reorganization and the report was adopted without a dissenting voice. The plan removes caste restrictions as to membership and admits any physician who will agree to discard all "pathies," who is liberal and broad-minded, and will subscribe to the Code of Ethics of the American Medical Association.

Expulsion of Dr. Cronin.

Charges were preferred by twenty Mount Clemens physicians against Dr. Michael C. Cronin, a practitioner of that place, for practice unbecoming a physician. His offense was that he had hired runners to solicit business at the hotels and railroad stations, the runners receiving a certain percentage of the fees. Dr. Cronin appeared before the convention, admitted that the charges were true, and was expelled from the society.

Election of Officers.

The report of the Nominating Committee was adopted and the following officers thereby elected: President, Dr. Albert E. Bulson, Jackson; vice-president, Dr. James C. Wilson, Flint; secretary, Dr. Andrew P. Biddle, Detroit, and treasurer, Dr. Charles E. Hooker, Grand Rapids.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Ulcers of the Cornea.

The following treatment of corneal ulcers, taken from *Rev. de Ther.*, is recommended by Galezowski:

R.	Iodoformi	gr. iss	09
	Cocainæ hydrochlor.	gr. i	06
	Petrolati	ʒiiss 10	

M. Sig.: Apply locally.

After the ulcer begins to heal and cicatrize, the following ointment should be applied:

R.	Hydrarg. chloridi mitis	gr. iiss	15
	Dionin	gr. i	06
	Lanolini	ʒiss 10	

M. Sig.: Apply locally.

Eczema of the Ears.

The following, in *New York Med. Jour.*, is recommended as the best application for the exudation and crusts in eczema of the ears:

R.	Zinci oxidi	ʒv	20
	Hydrarg. chloridi mitis	ʒi	4
	Pulv. amyli	ʒv	20
	Petrolati	ʒx	40

M. Ft. unguentum. Sig.: To be applied locally once a day to the affected surface; or:

R.	Acidi carbol.		
	Acidi salicylici, āā	gr. viiss	50
	Xeroform	ʒss	2
	Pulv. amyli	ʒv	20
	Petrolati	ʒx	40

M. Sig.: To be applied locally once daily after thoroughly cleansing the affected parts.

The following, according to *Merck's Archives*, is of service in the treatment of eczema capitis:

R.	Hydrarg. bichloridi	gr. ii	12
	Bismuthi subnit.	ʒss 2	
	Resorcin	gr. x	65
	Vaselini	ʒiv 15	
	Lanolini	ʒiss 45	

M. Ft. unguentum. Sig.: Apply thoroughly twice a day and cover with a cap. Before applying cut the hair close to the scalp and soften the crusts with some bland oil.

Migraine.

Kowolesky, as noted in *Med. Standard*, recommends the following in the treatment of migraine:

R.	Sodii bromidi	ʒii	8
	Tinct. strophanthi	ʒss	2
	Cocainæ hydrochlor	gr. iii	15
	Aq. aurantii flor.	ʒvi	180

M. Sig.: One tablespoonful three times a day in milk.

Adenoids.

In the treatment of adenoids, Parkinson, as noted by *Ther. Month.*, recommends the direct application to the naso-pharynx of an astringent as follows:

R.	Tinct. ferri chloridi		
	Glycerini, āā	ʒi	30

M. Sig.: Apply locally to the adenoid growth by means of a curved brush passed up posterior to the soft plate.

The foregoing treatment is particularly recommended for soft and gelatinous adenoids which produce temporary and recurrent obstruction of the nasal passages and cause symptoms such as cough, headache, discharge from the ears and deafness.

Cutaneous Pruritus.

Dr. Leredde of Paris, in *Ther. Month.*, states that aside from the general hygienic and dietetic treatment, more active remedies may be employed, which may be divided into chemical and physical. The chemical agents he divides into two groups, the anesthetic and reducing agents. The anesthetic agents send forth, at a low temperature, vapors which easily penetrate the skin and influence the irritated nerves. In France, he states that acetic acid is employed in the form of a lotion, also as a vinegar bath (one liter to the bath). In Germany it is applied as an ointment on the dry skin, and as a paste on the greasy skin as follows:

R.	Acidi acetici	ʒss-i	2-4
	Lanolini	gr. lxxv	5
	Vaselini	ʒiiss	10

M. Ft. unguentum. Sig.: Apply locally once or twice daily; or as a paste:

R.	Acidi acetici	ʒss-i	2-4
	Vaselini	ʒii	8
	Lanolini	ʒiii	12
	Amidin	ʒiiss	10

M. Sig.: Apply locally.

He recommends camphor as an excellent remedy, prescribed as follows:

R.	Ol. camphoratæ	ʒiss	6
	Vaselini	ʒv	20
	Lanolini	ʒx	40

M. Ft. ung. Sig.: Apply locally; or:

R.	Ol. camph.		
	Aq. calcis		
	Zinci oxidi		
	Amidin, āā	ʒiiss	10

M. Sig.: To be used as a local application.

He states that the foregoing anesthetic agents have the inconveniences of being only transitory in their action and only alleviate, and sometimes they cause exacerbations of the lesions by producing marked irritation. The reducing agents, on the contrary, act as curative agents to the pruritus in a very large number of cases. This latter class includes ichthyol, thiol, resorcin, naphthol, etc. Ichthyol may be used as follows:

R.	Ichthyol	ʒii	8
	Aq. destil	℥iv	120

M. Sig.: Paint the skin thoroughly and allow it to dry.

Ichthyol may also be employed in the form of a paste, but its action is then comparatively slight, the rule being that an ointment or aqueous solution should be used when a profound action is desired and a paste prescribed if irritation is feared and a more superficial action preferred. As an ointment ichthyol may be used as follows:

R.	Ichthyol	ʒiss	6
	Glycerini	℥ii	60

M. Sig.: Apply locally.

Thiol is a milder agent than ichthyol and may be employed in strength of five or ten per cent. in glycerin, water, or in the form of a paste.

The tar preparations should not be employed in acute infectious conditions of the skin, particularly if this infection is of follicular origin. They are especially valuable in inflammations of the folds of the skin associated with pruritus. The following formula containing pure tar may be prescribed:

R.	Ol. picis liq. (pure)	ʒiiss	10
	Acidi salicylici	gr. xv	1
	Saponis mollis	ʒi	4
	Vaselini	ʒiv	15

M. Sig.: Apply locally once or twice daily.

Resorcin and naphthol may be employed to advantage in the form of an ointment or paste.

General Rules for Feeding Young Children.

The following valuable rules for feeding children are laid down by W. Gilman Thompson in his "Practical Dietetics":

1. Allow time for meals.
2. See that the food is thoroughly masticated.
3. Do not allow nibbling between meals.
4. Do not tempt the child with the sight of rich and indigestible food.
5. Do not force the child to eat against its will, but examine the mouth, which may be sore from erupting teeth; and examine the food, which may not be properly cooked or flavored.

If good food is refused from peevishness merely remove it, and do not offer it again before next meal time.

6. In acute illness reduce and dilute the food at once.

7. In very hot weather give about one-fourth or one-third less food and offer more water. The young infant depends wholly on animal food and derives the necessary carbon largely from the sugar of milk. The older child lives on animal food in part only, and begins to derive additional carbon from bread and other cereal foods.

Medicolegal.

Not Liable to Occupation Tax by Having Two Offices.—The Court of Criminal Appeals of Texas has, in Broiles vs. State, reversed the judgment of the County Court, wherein the party named was convicted, under subdivision 13 of the occupation tax act of 1897, for practicing medicine as a specialist traveling from place to place, and his punishment assessed at a fine of $75, being the amount of state and county taxes. It says that the proof showed that he was located and had his residence at one place, and also kept an office in another town, where this offense was alleged to have been committed. But he was not, it holds, a traveling physician or specialist going from place to place in the practice of his profession, within the meaning of the occupation tax act, and that a new trial should have been granted because the evidence failed to support the verdict.

Privilege When Physician Was Intended for Witness.—The Supreme Court of Iowa says, in the personal injury case of Doran vs. the Cedar Rapids & Marion City Railway Company, that one assignment of error related to the exclusion of the testimony of a physician who was consulted by the party suing, but, not being called for him as a witness, was called for the company. The objection was made for the party suing that the physician could not testify, under Section 4608 of the Iowa Code, which prohibits a physician or surgeon from disclosing any confidential communication intrusted to him in his professional capacity. Counsel for the company urged that this witness was not consulted as a physician with reference to the treatment of the party suing, but only for the purpose of securing his testimony as a witness, and that therefore the statute did not apply to him. The court, however, says that it was not referred to any authorities which make this distinction. It seems to it that whenever an injured party consults a physician as physician, and discloses to him his physical condition, and thus enables him to obtain information which as an ordinary person he would not have obtained, such physician is prohibited from testifying with reference to the knowledge thus obtained, except with the consent of the injured party.

Delay of Telegram to Physician in Confinement Case.—The Supreme Court of Nebraska affirms, on a commissioners' opinion, in Western Union Telegraph Company vs. Church, a judgment for $950 damages against the company for a failure promptly to deliver a telegram addressed to a physician, saying: "Come to L. C. Church's at once. L. C. Church." The message was delivered to the company for transmission at about 6 p. m., and was delivered at about 9 p. m. of the same day. It had been previously arranged with the physician to attend a confinement case in that family, and he started immediately to go to it on receipt of the telegram, but did not arrive until after the birth of the child, a "foot presentation," during which it died. In the commissioners' opinion it was clear that the telegram itself, addressed to a physician—one known to be such by the agent of the telegraph company at the place of delivery—was sufficient to apprise it of the necessity of prompt delivery. It could not be supposed that a message of the character of that in controversy should specifically set out the actual conditions calling for a physician's presence, the person who was sick, or the nature of the disease; and it was not necessary that this should be done in order to apprise the company of the need promptly to deliver the message. There was no doubt that the labor during confinement was prolonged on account of the failure of the physician to attend, and the party suing was entitled to substantial, rather than nominal, damages. Nor was the verdict excessive. That great pain and agony ordinarily accompany childbirth, even in cases where sympathetic and competent persons are in attendance to render all assistance lying within human power, is a matter of common information. It may be said that this pain and agony are such that no person could negligently be the occasion of its prolongation without being culpable.

Liability of Employers Getting Waste from Hospitals.—The Court of Appeals at Kansas City, Mo., in the case of Nickel vs. the Columbia Paper Stock Company, affirms a judgment for damages in favor of the party suing, who, while sorting old paper and rags for the company, was poisoned and made violently sick by the contents of a sack of old paper gathered for some hospital and dumped on the table where she worked, in which sack were pieces of cotton saturated with blood and with urine and various medicines, and pieces of decaying flesh. The court says that she did undoubtedly assume the ordinary risk of injury which would naturally or reasonably follow the character of employment in which she was engaged. Her work was not a cleanly work, nor was it free from the general risk of disease—a risk which the company, as her employer, could not reasonably wholly provide against. For, with diligent circumspection on the part of the company, there would still be risk of disease in such work. But these facts did not exculpate the company from an affirmative act in putting on her work table a bundle of poisonous waste matter, gathered from a place where such waste matter might reasonably be expected to be found. If it had gathered waste material from a smallpox pesthouse, and placed it on her table, whereby she became diseased, could it be said that she assumed the risk of such conduct? The extraordinary character of the occurrence was enough to demonstrate that she should not be held to have assumed the risk of its happening. If the foul and poisonous material was collected by agents for whose acts the company was responsible, then it should answer for the consequences. If the material was collected without the company's knowledge or authority, then the jury found that common prudence would have dictated an inspection thereof before handing it over for sorting. And if the business was such that such an injury as happened was likely to unavoidably follow, then it was the company's duty to have warned this employe of the danger, or have taken precautions against such consequences. She was not herself an inspector of what was proper material to be given over for assortment.

Vaccination of School Children—Commissioner's Acts.—The Supreme Court of Minnesota says, in the case of State vs. Zimmerman, that the question whether the public authorities may require the vaccination of children, as a condition precedent to their right to attend public schools, has been much discussed by the courts. The authorities are not uniform on the subject. By some courts it is held that the power exists and may be exercised without regard to the existence of an emergency occasioned by an epidemic of smallpox; other authorities limit the right to exercise the power, whether expressly conferred by legislative enactment or not, to the presence of an epidemic, and when there is imminent danger of the disease spreading among the people of the community; and by still other courts, that, even without legislative authority, health officers possess the power to impose such conditions, and may enforce them in cases of emergency amounting to "an overruling necessity." But whatever may be the correct rule to apply to controversies of this kind, if the power may be exercised under any circumstances, where legislative authority has been granted, it should be where there is an epidemic of smallpox and imminent danger of its spreading. The courts are not concerned with the question of the efficacy of this treatment, nor with considerations relative to its necessity and propriety as a police regulation, except, perhaps, in those cases where an abuse of power is pleaded and shown. The treatment may be, as claimed by some, a gross interference with individual liberty, or, as claimed by others, a certain preventive of a much-dreaded disease, and the spread of the same, and therefore a great public benefactor. The court is not to be understood as expressing an opinion on the merits of the treatment. Again,

it says that it may adopt for present purposes the rule that the power to enforce vaccination, as a condition to the right of admission to the public schools, may be exercised by local authorities in cases of emergency only, and not then unless expressly or by fair implication conferred upon them by the legislature. However, a general grant of power, in broad and comprehensive terms, to do all acts and make all rules and regulations deemed necessary and expedient for the preservation of the public health, the court holds, vests in the authorities to whom granted power to enforce, in cases of emergency rendering it reasonably necessary in the interests of the public health, and for the prevention of the spread of smallpox, a regulation requiring children to be vaccinated, as a condition to their admission to the public schools. And such a regulation made by the commissioner of health of the city of St. Paul the court holds valid and enforceable. The provisions of the charter of the city, adopted under and pursuant to constitutional authority, providing for a commissioner of health, and defining his duties, it holds are, as respects the duties there imposed on such commissioner, self-executing, requiring no action on the part of the board of health or the city council to authorize the performance of the same. He is made the executive officer of the health department, and is required to perform the several acts and duties specified, without reference to any action taken by the board. Nor was it controlling that he assumed to proceed by authority of an ordinance, the warrant justifying the regulation made by him being found in the provisions of the statute and the charter. Had he stated in the order that it was founded on a regulation of the police department, it would have been none the less valid and enforceable.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine (Philadelphia), July 5.

1 *Case of Cystic Degeneration of Both Kidneys. I. N. Danforth.
2 *Pernicious Anemias: Their Diagnosis and Treatment. George Dock.
3 Tuberculosis of the Iris. Harry Friedenwald.
4 Six Cases of Epilepsy Due to Ametropic Eye-Strain. George M. Gould.
5 *Further Notes on Vesical Hyperesthesia in the Female. Frederick Bierhoff.
6 *Ovarian Irritation as a Factor in the Etiology of Pseudocyesis. J. Thompson Schell.
7 What Is Pathology? John B. Nichols.

Medical Record (N. Y.), July 5.

8 *What Shall We Do with the Consumptive Poor? S. A. Knopf.
9 *Intussusception with a Report of Three Additional Operative Cases. John F. Erdmann.
10 *On the Transportation of Mosquitoes by Vessels. Edmond Souchon.
11 *Contagious Ophthalmia in Industrial, Residential and Public Schools, and in Asylums and Hospitals. Richard H. Derby.
12 Subglottic Sarcoma Removed Endolaryngeally with Galvanocautery Snare. J. W. Gleitsmann.

Medical News (N. Y.), July 5.

13 *A Plea for the Simpler Medicinal Treatment of Chronic Nervous Diseases. Joseph Collins.
14 Asepsis and Antisepsis in Their Relation to Modern Surgical Technic. F. H. Badger.
15 *Tetany. Sanger Brown.
16 *The Examination of the Gastric Contents in Children. Louis Fischer.

Philadelphia Medical Journal, July 5.

17 The King's Case. Joseph Price.
18 Appendicitis. John B. Deaver.
19 *Progress in Neurology. Joseph Collins.
20 Carcinoma of the Eyelids, with Secondary Involvement of the Eyeball:; Removal of the Growth by Extensive Plastic Operations; Recurrence. Wm. Campbell Posey and Edward A. Shumway.
21 *Climatology of California. Alexander G. McAdie.
22 Strumectomy in a Case Complicated with Tuberculosis Pulmonalis. H. O. Sommer.

New York Medical Journal, July 5.

23 *Minor Injuries of the Eye. Percy Fridenberg.
24 *The Differential Diagnosis of Acute Polyarticular Rheumatism, from a Surgical Standpoint. Walter G. Stern.
25 A Case of Progressive Muscular Atrophy and one of Pseudohypertrophic Paralysis in Young Children. M. Neustaedter.
26 Disinfection. Robert J. Wilson.
27 The Eye as a Factor in Causing General Symptoms; Illustrated by the Report of a Case. James L. Minor.
28 *Further Study Relative to the Pelvic Organs, Their Associated Diseases, Symptoms and Treatment. John L. Jelks.

Cincinnati Lancet-Clinic, July 5.

29 *Suture of Heart Wounds. Harry M. Sherman.
30 *Treatment of the Other Tube in Tubal Gestation. J. F. Baldwin.

Boston Medical and Surgical Journal, July 3.

31 The Present Status of the Practice of Medicine, and the Urgent Need of More Stringent Application of Hygienic and Sanitary Laws. (Concluded.) Willard S. Everett.
32 *The Importance of Milk Analysis in Infant Feeding. (Concluded.) A. H. Wentworth.
33 *On the Classification of the Benign Thyroid Tumors. Joseph H. Pratt.
34 *Tuberculosis of the Testicle. Paul Thorndike.
35 *Tuberculosis of the Urinary Tract. Edgar Garceau.
36 *Tuberculosis of the Prostate. L. R. G. Crandon.

St. Louis Medical Review, July 5.

37 Report of Progress of Medicine. Robert T. Sloan.

Northwestern Lancet (Minneapolis), June 1.

38 *Acute Suffocative Pulmonary Edema. LeRoy Crummer.
39 Report of a Case of Partial Tarsectomy for Diffuse Tubercular Inflammation of the Anterior Tarsus. H. B. Sweetser.
40 The Dietetic Causation and Treatment of the Gastrointestinal Diseases of Infancy. R. O. Beard.
41 The Ocular Expressions of Renal Disease. Howard McI. Morton.

June 15.

42 Acute Rheumatism. H. L. Staples.
43 Japanese Hospitals. A. A. Law.
44 Treatment of Pelvic Cellulitis. J. H. Rishmiller.
45 The Pioneer Doctors of the Minnesota Valley. J. W. B. Wellcome.

Pediatrics (N. Y.), June 15.

46 Report of a Case of Cerebrospinal Meningitis, Probably Due to the Pneumococcus, Followed by Recovery. Frederick Krauss.
47 *A Review of Some Interesting Work on Infectious Diseases. John Ruhrah.
48 Imbecility Consequent upon an Infectious Disease. H. Illoway.

Medical Age (Detroit, Mich.), June 25.

49 Cocain Anesthesia by Lumbar Puncture. S. G. Gay.
50 Placenta Previa. W. H. Miller.
51 Sexual Selection as a Corrective Influence. G. R. Johnson.

Medical Fortnightly (St. Louis), June 25.

52 Treatment of Typhoid Fever. W. A. McIntosh.
53 Address, Medical Association of Missouri. J. D. Griffith.
54 Methods of Diagnosis from a Medical Standpoint with Special Reference to the Clinical Laboratory. George E. Baxter.
55 Tetanus. F. Savary Pearce.
56 Diseases of the Stomach. (Continued.) J. M. G. Carter.

Virginia Medical Semi-Monthly (Richmond), June 13.

57 Case of Locomotor Ataxia Detected in Its Incipiency by Examination of Patient's Eye, with Observations Concerning the Disease. George F. Keiper.
58 Acute Obstruction of Bowel. J. B. Boucher.
59 Alcoholic Psychoses: Clinical Aspects and Differential Diagnoses. Charles E. Stanley.
60 The Toxic Effects of Trional. E. Pierre Mallet.
61 Some Features of Medical and Surgical Study in London and Berlin. Alva S. Grimm.
62 Case of Enterolith, with Specimen. James G. Wiltshire.
63 Case of Afebrile Pneumonia. J. L. Winner.
64 A Case of Hematuria. John Neff.
65 Malaria and Pregnancy. A. B. Greiner.

American Journal of Obstetrics (N. Y.), June.

66 *Second Contribution to the Study of Ulcerative Lesions of the Vulva, Commonly Called Lupus or Esthiomene. Grace P. Murray.
67 *Massage of the Breasts During Lactation. C. S. Bacon.
68 *An Operation for Cystocele. B. C. Hirst.
69 Report of a Case of Uterus Bicornis with Double Vagina. John H. Girvin.
70 Adenomyomata of the Uterus. J. M. Baldy and W. T. Longcope.
71 *Infected Ovarian Cysts. Reuben Peterson.
72 On the Etiology, Histology and Usual Course of Ectopic Gestation. (To be continued.) Samuel W. Bandler.
73 The Choice of Operations for the Relief of Retrodisplacements of the Uterus. Joseph T. Johnson.
74 Self-Abuse in Infancy and Childhood. John T. Winter.
75 The Pathogenesis and Therapeutics of Puerperal Eclampsia. George T. Harrison.
76 Threatened Tubal Abortion. J. Wesley Bovée.

Medical Times and Register (Philadelphia), June.

77 Abscesses, Adenomas, Adipose Tumors, Aneurisms, Callosities, Hemorrhoids, Torticollis, Specific and Malignant Diseases of the Rectum and Ulcerations. (Continued.) W. H. Walling.

Pennsylvania Medical Journal (Pittsburg), June.

78 *Present Status of the Bottini Operation as a Method of Treatment in Obstructive Hypertrophy of the Prostate Gland, Derived from a Summary of Eight Hundred and Eighty-eight Operations by Forty-eight Operators. Orville Horwitz.
79 A Case of Perforating Typhoid Ulcer; Laparotomy; Recovery. Wm. L. Rodman.

80 Statistics of Typhoid Fever at the Philadelphia Hospital from Jan. 1, 1897, to Dec. 31, 1899. Herman B. Allyn.
81 Some Fractures in Children and Their Treatment. L. J. Hammond.
82 The Exclusiveness and Inviolability of the Laws of Cure—A Tentative Argument. W. B. Konkle.
83 The Common Error in Treating Fractures of the Lower End of the Radius. John B. Roberts.

Louisville Monthly Journal of Medicine and Surgery, July.

84 Pathology and Treatment of Gallstones. Louis Frank.
85 Cancer of the Uterus. Lewis S. McMurtry.
86 Chronic Diseases of the Bladder in the Male. H. H. Grant.
87 Some Obscure Points in Syphilis—Etiological and Pathological. Henry H. Koehler.

Bulletin of the Johns Hopkins Hospital (Baltimore), June.

88 *Acute General Gonorrheal Peritonitis. Guy L. Hunner and Norman McL. Harris.
89 *Eosinophilia in Filariasis. William J. Calvert.
90 *Blood Cultures in Pneumonia. Rufus I. Cole.
91 Malarial Fever in Infancy, Probably Maternal in Origin. Lindsay Peters.

Medical Herald (St. Joseph, Mo.), June.

92 *Address, Medical Association of Missouri. J. D. Griffith.
93 The Urea Treatment of Tuberculosis. W. P. Miller.

University of Pennsylvania Medical Bulletin (Philadelphia), June.

94 *The Etiological Significance of the Acid-Resisting Group of Bacteria, and the Evidence in Favor of Their Botanical Relation to Bacillus Tuberculosis. A. C. Abbott and N. Gildersleeve.
95 Alfred Stillé. William Osler.
96 The Necessity for an Elective System in a School of Medicine, and Its Disadvantages. Herbert L. Burrell.
97 Specific Gravity of the Urine and Nitrogen Elimination in Pregnancy. Caspar W. Miller.
98 A Brace for Antero-posterior Curvature of the Spine. A Flexible Curve for Body Tracings. Gwilym G. Davis.

Canada Lancet (Toronto), June.

99 Address, Ontario Medical Association. N. A. Powell.
100 Practical Points in Life Insurance Examinations. S. M. Hay.
101 A Case of Acute Nephritis. John Hunter.
102 Acute Insanity from Dental Irritation and Toxemia. Ernest Hall.
103 The Surgical Treatment of Empyema. J. L. Turnbull.
104 Hysterectomy for Uterine Fibroids. N. E. MacKay.

The Laryngoscope (St. Louis), June.

105 Relations of the Facial Nerve to the Tympanum, Especially in Tympanic Exenteration. B. Alex. Randall.
106 *Deformities of the Bones of the Face and Nose. (Continued.) Eugene S. Talbot.
107 *Thiosinamin in Ear Diseases. Joseph C. Beck.
108 The Rhinologist, an Important Factor in the Prevention of Tuberculosis. F. M. Pottenger.
109 The Nose and Throat in the History of Medicine. (Continued.) Jonathan Wright.

Medical and Surgical Monitor (Indianapolis), June 15.

110 Motion in the Animated World. Guido Bell.
111 Hydrotherapy as a Prophylactic. J. G. Nehrbas.
112 A Study of the Association of Neurasthenia and Hysteria. Cecil A. Butler.
113 The Physician as an Educator. W. W. Parsons.
114 Bleaching or Distinct Pallor of the Temporal Segment or Papillomacular Bundle of Optic Nerve Fibers, Due to Other Causes Than Tobacco and Alcohol. J. O. Stillson.
115 A New Method of Holding in Place the Retained Catheter. Joseph E. Morrow.

Archives of Pediatrics (N. Y.), June.

116 *The Etiology and Prophylaxis of Summer Diarrheas in Children. Henry Heiman.
117 *The Treatment of Summer Diarrhea. Charles G. Kerley.
118 *A Plea for the Use of O'Dwyer's Intubation Instruments. M. Nicoll, Jr.
119 A Case of Diabetes Mellitus in a Child Four Years Old. Heinrich Stern.
120 A Case of Kerion. Emelyn L. Coolidge.

Kansas City Medical Record, June.

121 Hypertrophy of the Turbinates and Its Treatment. P. M. Farrington.
122 Rectal Examination. J. M. Frankenburger.

Therapeutic Gazette (Detroit, Mich.), June 15.

123 *Vaccination, Its True and Spurious Types: With Remarks on Its Protective Influence in the Recent Epidemic of Smallpox. Wm. M. Welch and Jay F. Schamberg.
124 Home Treatment of Tuberculosis. Lawrence F. Flick.
125 Diagnosis and Treatment of Tubercular Arthritis. James K. Young.
126 The Treatment of Locomotor Ataxia by Educational Movements. John H. W. Rhein.
127 Ankylotic Rigidity of the Spine (Rhizomelique Spondylosis) Much Improved by the Use of Hot Air. C. S. Potts.
128 A Study of Cyclic Vomiting, or Autoinfection and Its Treatment. Bernard B. LeRoy.

Illinois Medical Journal (Springfield), July.

129 Pernicious Anemias; Their Diagnosis and Treatment. George Dock.
130 Malignant Disease of Kidney in Children—Report of Case with Operation. J. F. Percy.
131 What Should Be the Attitude of the Medical Profession Toward the Secular Press? J. W. Pettit.
132 Diphtheria and Its Management. E. A. Elden.

International Medical Magazine (N. Y.), June.

133 *The Treatment of Simple Obesity in Otherwise Healthy Persons. Carl von Noorden.
134 *Diagnosis of Prolapsed Kidney with Illustrations of the Methods of Diagnostic Palpation. Augustin H. Goelet.
135 The Place of Drugs in the Treatment of Stomach Troubles. Boardman Reed.
136 External Hemorrhoids. Samuel G. Gant.

Clinical Review (Chicago), July.

137 Cirrhosis of the Liver: Pathology, Etiology and Symptoms. J. M. Patton.
138 Cirrhosis of the Liver: Symptoms and Treatment. Arthur E. Price.

Medical Bulletin of the Washington University (St. Louis), April.

139 A One-Year Anatomical Course; Its Arrangement, Merits and Disadvantages. R. J. Terry.
140 Endemic Amebic Dysentery. Jesse S. Myer.
141 *An Experimental Study of Intestinal Repair and Regeneration After Anastomosis by Suture. Willard Bartlett.
142 Exercises in the Surgical Anatomy of the Temporal Bone. Selden Spencer.
143 Acute Degeneration of Liver and Kidneys Following Chloroform Narcosis. Albert E. Taussig.

Medical Sentinel (Portland, Ore.), June.

144 The Relation of Psychology to Medicine. J. Allen Gilbert.
145 Ectopic Gestation, with Delivery of a Living Child at Term. E. F. Root.
146 Rupture of Bladder During Operation for Pyosalpinx. J. William Scamell.

Alabama Medical Journal (Birmingham), June.

147 *Hypertrophy of the Prostate Gland. James E. Dedman.
148 The Relation of the State to Tuberculosis. Edgar Allen Jones.
149 Appendicitis. George S. Brown.
150 What Precautions Should Be Taken to Prevent the Spread of Infectious Diseases. Glenn Andrews.

Texas Medical News (Austin), June.

151 The Venomous Snakes and Spiders of Texas. H. W. Crouse.

Indiana Medical Journal (Indianapolis), June.

152 *Immunity, Natural and Artificial; the Formation of Specific, Antitoxic and Bactericidal Substances, and Their Employment in the Treatment of Infectious Diseases. Victor C. Vaughan.
153 *Chicken-pox in the Adult. Charles E. Ferguson.
154 The Rheumatic Eye Diseases. L. D. Brose.
155 Pneumococcic Conjunctivitis. Walter N. Sharp.

New Orleans Medical and Surgical Journal, July.

156 Notes on the Contracting Kidney. Otto Lerch.
157 The Tongue as a Diagnostic Factor in Disease. L. G. LeBeuf.
158 The Action and Uses of the Ice-Bag. Amedée Granger.
159 Malarial Hematuric Fever. J. P. Francez.

Medical Examiner and Practitioner (N. Y.), June.

160 *The Shape of the Tuberculous Chest. Woods Hutchinson.
161 Diseases of the Ear of Interest to Insurance Examiners. Philip Hammond.
162 Prognosis in Chronic Disease of the Heart. George W. Webster.
163 The Ascending Spiral in the Therapeutics of Tuberculosis. Charles Lyman Green.
164 Hernia—A Pertinent Question in Life Insurance. Byron G. Van Horne.
165 A Modified Method of Testing Diabetic Urine. M. D. Hoge, Jr.
166 The Effects of Nicotine. Jay W. Seaver.
167 Diabetes Mellitus: Its Diagnosis and Treatment, with History of Cases. James H. Reed.

Canadian Journal of Medicine and Surgery (Toronto), July.

168 The Humors of a Ship's Practice. E. H. Stafford.
169 The General Management and Constitutional Treatment of Tuberculosis of Bones and Joints—Special Reference to the Use of Tents. H. P. H. Galloway.
170 Ectopic Gestation, with Report of a Case. E. Ralph Hooper.

Vermont Medical Monthly (Burlington), June 25.

171 Sunlight and Malaria—Cure of Intermittent Fevers by Darkness and Fluorescent Light. A. F. A. King.
172 The Diagnosis and Treatment of Chronic Interstitial Nephritis. A. O. J. Kelly.
173 Pathology of Glioma of the Retina, with Clinical Notes of a Recent Case. Edward S. Peck.
174 The Medical Department of the University of Vermont. H. Edwin Lewis.
175 Gallstones as a Surgical Affection. S. H. Weeks.
176 The Significance of Adenitis in Infants and Children. Godfrey R. Pisek.

Carolina Medical Journal (Charlotte, N. C.), June.

177 Address, North Carolina Medical Society. Robert S. Young.
178 Treatment of Typhoid Fever. A. A. Kent.
179 Infant Feeding. G. A. Ramsaur.
180 Two Cases of Ectopic Pregnancy. D. A. Stanton.
181 Union by Primary Intention. Stuart McGuire.

---

1. **Cystic Kidney.**—The special points of interest in the three cases reported by Danforth are given by him as: 1. The

enormous size of the kidneys, which weighed about twenty-five times the usual amount, without causing serious inconvenience to the patient. 2. The perfect, complete and absolute metamorphosis of the kidneys into a congeries of cysts. These cysts, he is inclined to believe, originated during fetal life. 3. The robust appearance and great activity of the patient, who was under his observation for several years and seemed to be in vigorous health during that same time.

2. **Pernicious Anemia.**—Dock discusses the subject of pernicious anemia, holding that this name has its position in the literature and in the medical nosology. As regards the causation of pernicious anemia, he thinks that much is yet unknown. He has been struck with the large proportion of cases with infectious processes of the mouth such as carious teeth, gingivitis and pyorrhea alveolaris. The condition of the blood is discussed, but he says it is not enough to find megaloblasts in the blood, and a diagnosis can not be made without other symptoms of the disease. The practical diagnosis presents, at times, difficulties. The variation of symptoms is very great. Leukemia, Addison's disease, cardiac disease, etc., are liable to be erroneously diagnosed. Examination should be thorough, and he thinks examination of the specific gravity of the cells and serum separately is also of value. The examination of stained preparations is also necessary for the final verdict and essential in the less advanced stage. He says it is not enough now to say that the prognosis is unfavorable. We must distinguish certain cases of bothriocephalus anemia, in which recovery may follow removal of the parasites. Syphilitic cases are also relatively favorable, but in these the tendency to relapse must not be forgotton. He has not seen a case of real pernicious anemia which he considers perfectly recovered, though great improvement may for a time occur. The blood examination, he thinks, can not aid us very much in the prognosis. The blood changes have no constant relation with the outcome. We should consider the cases with the hope of improvement, and be guarded as to the prognosis. In the majority of cases the treatment should begin with careful work by the dentist, and the use of antiseptic mouth washes and the condition of the stomach should be cleared up as much as possible. The diet should be laid out in detail with reference to the gastric and intestinal conditions and care taken that the directions are followed. Intestinal antiseptics are sometimes of distinct benefit. In some cases the weakness is so marked that the patient must be put to bed and massaged. Overexertion should be warned against. Bathing should be practiced according to the strength and the cold sponge or douche be used whenever possible. Fresh air is not a less important factor in the treatment. Relapses should be looked for and not allowed to go too far without attention. As regards drugs, he speaks somewhat in favor of arsenic and iron, though the latter is sometimes thought to be dangerous. He has used both with benefit. He has often used with satisfaction a drug but rarely mentioned in the treatment of this condition, viz., mercuric biehlorid, not only in syphilitic cases but also in others. It acts, he thinks, like arsenic by irritating the blood-forming organs.

5. **Vesical Hyperesthesia in the Female.**—Bierhoff ends his paper with the same conclusions as those published in a former article (*American Journal of the Medical Sciences*, cxx, No. 6), which he says are more firmly fixed by his further experience, as follows: 1. The term "vesical hyperesthesia," or "irritable bladder," is in almost every case, in the female, erroneously applied. 2. As a true neurosis vesical hyperesthesia occurs rarely. 3. In cases in which vesical hyperesthesia exists it does so only as a symptom; in the majority of cases as a direct result of some change in the vesical mucous membrane, in the minority as an indirect result of changes in other organs adjoining or near the bladder. 4. The diagnosis of the causative factor must rest on a thorough examination not only of the bladder but also of the urethra and the genital and pelvic organs as well. 5. The treatment must be directed both against the local changes and their causative factors.

6. **Pseudocyesis.**—Four cases are reported by Schell of pseudocyesis or phantom pregnancy, which he attributes to ovarian irritation. He thinks it is a manifestation of hysteria, but pelvic irritations are the possible cause of the hysteria in some cases.

8. **The Consumptive Poor.**—Knopf holds that we should remove those suffering from tuberculosis in the second or more advanced stages of the disease to a state hospital or sanatorium, and the dispensary cases should be seen that they are able not only to take the medicine but to have sufficient nutrition, which is an important part of the treatment. The relatives of a patient should always be examined to forestall other cases. At the present there is a scarcity of proper institutions of the sort needed.

9. **Intussusception.**—From a study of twelve cases previously reported and analysis of subsequent experience the salient features are given by Erdmann as follows: 1. There were 10 operative cases, of which 5 were of the ileocolic, 1 ileocecal, 2 enteric, 1 colonic, and 1 multiple—ileocolic and enteric, varieties. 2. Only 1 case recovered by the use of injections. 3. One death occurred in which enemata, etc., had been used. No operation allowed. 4. Of 10 operative cases 5 died and 5 recovered, and of the deaths 3 were cases operated on as a last resort after all mechanical means had been exhausted, 2 being resections for gangrene and the third septic from a seven days' duration of the intussusception. 5. Tumor could be palpated through the abdominal wall in 5 cases, while through the rectum only 3 cases were palpable. 6. Had they cases 1 and 2 to operate on again resection would not have been done, but a temporary enterostomy would have been made. Although the mortality rate is 50 per cent. in the entire lot, it must be remembered that the cases terminating fatally were of two and one-half, three, four, and seven days' duration when operated on, and that of these, 3 were practically moribund at the time of operation. Since writing this paper the author has operated on five more cases, all under twelve months of age.

10. **Transportation of Mosquitoes by Vessels.**—Souchon gives reports from a number of physicians of the examination of steamers from various possibly infected ports as regards the presence of mosquitoes. He thinks there may be still enough possibility of infection to warrant a continuation of the quarantine rules. At the end of the quarantine season he says there will be about 125 reports or more from which it may be possible to more definitely settle the question of the presence of mosquitoes on board vessels during short voyages and the time of their remaining on board.

11. **Contagious Ophthalmia.**—According to Derby, the passage of an act by the New York legislature some 15 years ago decidedly lessened infections of the eyes in asylums and public schools. The greatest danger now is not in the city but in the country districts, where the figures are much less favorable.

13. **Chronic Nervous Disease.**—Collins pleads for less energetic and indiscriminate treatment of such diseases as locomotor ataxia, the treatment of which is generally overdone, epilepsy, neurasthenia and sciatica, which are likewise the subjects of the most irregular and wholesale drugging. The results of these treatments are that patients lose faith in medicine and fall into the hands of quacks. He does not mean to imply that drugs are not beneficial in regulating the course of the disease. What we need is a thorough study of the cases and a realization of the fact that drug administration is not always the most important factor in bringing about a cure of the disease. It is the abuse of drugs he condemns, not their legitimate use.

15. **Tetany.**—Brown describes the symptoms, diagnosis, etiology, pathology, etc., of tetany, remarking in the beginning that a careful research of the literature up to 1898 has shown him that not more than 100 cases have been reported in this country up to that time. It seems, therefore, to be rare here as compared with Europe. The treatment is only specific when the cause is associated with thyroid defects or pregnancy. Current views of the pathogeny, in the absence of an antidote, favor the eliminatives. The supporting treatment is advisable, and where dilatation of the stomach exists, the condition must be treated. He remarks on the use of sedatives; that he

thinks potassium bromid is most generally useful, while the hydrobromate of hyoscin hypodermically administered is quickly effective in relieving the severity of the paroxysms in some instances. Chloral has been the best hypnotic in his hands, and full chloroform narcosis should be resorted to when there is involvement of the larynx and respiratory muscles that threatens a speedy fatal asphyxia. The subcutaneous injection of pilocarpin is sometimes beneficial. Neither drug, however, is more than palliative for the time being and continued use is dangerous. He says in conclusion that until some new demonstration which will warrant a separation on pathologic or pathogenic grounds be made, it may be expedient to go on including under one caption cases presenting such wide variations as did one he describes, but if to these there be added the cases incident to child-bearing, infancy, or childhood, gastric dilatation and thyroid deprivation, the necessity for further investigations along this line which will permit a more satisfactory classification is sufficiently obvious.

16. **The Gastric Contents in Children.**—From a study of a series of cases Fischer remarks that the following points may be submitted as worthy of note: 1. In atrophic children and in subacute dyspeptic conditions, HCl could not be found. The organic acids, lactic and butyric, were present. Sometimes acetic acid was also found. There was acidity in all anemic conditions, also in that form of disease resulting from malassimilation, known as athrepsia infantum. The motility of the stomach was found to be greatly reduced when such test could be applied. The salol test was delayed for several hours in some instances. It might be of interest to note that salol was frequently given in the treatment of febrile conditions, and in this manner its effect could be noted. 2. In very young infants, especially in healthy nurslings, there is an excess of lactic acid at the commencement of digestion after the sixth month and until the end of the first year. Free hydrochloric acid can be found at the end of the digestive process in the same proportion as it is found in adults. In healthy children over one year, we find free hydrochloric acid in one to one and a half hours after feeding. Most specimens of chyle examined were procured at least one and a half hours after feeding. Some specimens were procured two hours after feeding and still other specimens two and a half hours after feeding. 3. At the beginning of the digestive process, lactic acid predominates; at the end of digestion, hydrochloric acid is in excess. There is a constant antagonism between the lactic and hydrochloric acids. When gastro-enteric disorder existed, in which both stomach and intestines participated, free hydrochloric acid could not be found. 4. The gastric contents of children fed on raw milk warmed to normal blood temperature or about 100 F. always showed a better state of digestion than did those of children fed on milk which had previously been subjected to superheating. 5. Cheesy curd so frequently found in hard, rubbery lumps two and three hours after a meal of sterilized milk, was invariably found more flocculent and less thick when raw milk was fed in place of the sterilized milk. 6. Constipation, which invariably existed when superheated milk was used, always disappeared without medicinal treatment when the milk was subjected to less heating and fed in a manner that corresponds to what Nature teaches us. 7. Breast-milk has a temperature of about 100 F. and cow's milk should never be fed at any other temperature. The more mechanical manipulation milk is subjected to, the greater will be the risk of exposing the same to contamination. Rather than do good thereby, we do positive harm. 8. Careful study of babies fed exclusively on sterilized milk will show systemic defects and subnormal tendencies to infection; their bony structures will be found to be deficient; spinal disease and deformities can be traced to deficient nutrition, which was destroyed by superheating milk while sterilizing and Pasteurizing the same.

19. **Neurologic Progress.**—Collins' presidential address reviews the investigations, especially the foreign ones, in the line of neurologic work during the past year. He is inclined to accept the results of Bethe and of Ballance and Stewart as possibly sufficient if verified to require some modification of the neuron doctrine as held at the present time, though he does not think there is anything that can not be made to harmonize with it if properly conceived. The author mentions cerebral localization, as studied by Sherrington, and Grunbaum and Munk, and the importance of the Babinski reflex as evidence of the degeneration of the crossed pyramidal tracts, the topography of the spinal cord, pathologic anatomy of paresis, family paralysis, etc. The address is not capable of being abstracted in full, but should be read.

21. **California Climatology.**—The climatic conditions of California as regards temperature and moisture, sunshine, etc., especially from the health seekers' standpoint, are described by McAdie. He finds that it is in its total extent a land of contrast, of sunshine and fog, heavy and scant rainfall, but with a moderate and agreeable temperature throughout from its proximity to the ocean. With its diversified topography it also has diversified climatic conditions, but there is a constant exchange of fresh air throughout the state and it is out of the line of great disturbances, which pass it further to the north. All these combine to make the climate different from that of other sections of the country. The effect of the climatic condition is well shown in the flora of the state; what it will be on man is yet to be written.

23. **Eye Injuries.**—Fridenberg reviews the various minor injuries to which the eye is subject and calls attention to the fact that many accidents are due to the neglect of ordinary precautions and protective measures among stone-cutters, masons, etc., to careless handling, especially by children, of pointed and cutting instruments, to their playing with pistols, air-guns, fire, etc. It is a part of the physician's duty to call attention to these special dangers as well as to treat the cases that have occurred.

24. **Rheumatism.**—The diagnosis of acute polyarticular rheumatism is given at length by Stern, who points out the various conditions that may be confused with it and the points of differential diagnosis. One of the most puzzling of these conditions is the polyarticular pseudo-rheumatism of tuberculous arthritis, of which he reports two cases. The form and appearance of the joints are most characteristic, but one usually best learns by experience what can not be gained by description. There is no sharp boundary to the swelling, elasticity and consistency of the parts, and very little reddening or other acute symptoms present. Early fixation is an important feature. The immediate reasons for suspecting such a joint to be other than rheumatic are the early fixation, the fact that salicylates are valueless, the form of the tumor and the tuberculin reaction. Synovitis serosa can be mistaken for acute polyarticular rheumatism when it is multiple, and the great swelling, out of proportion to the other signs, is a diagnostic point. Purulent synovitis, when it arises, is generally secondary and the early appearance of edema is characteristic. Puncture reveals pus, and blood-letting will show marked leucocytosis. The spleen is usually enlarged and the pulse full and bounding. Intermittent hydrops is generally polyarticular, afebrile and only its sudden appearance and pain simulate rheumatism. Syphilitic arthritis lacks redness or tenderness and there is little accumulation of fluid within the joint, and iritis is another sign. Arthritis deformans has its exacerbations which suggest rheumatism. The deposits about the joints and the great muscular atrophy are characteristic. Gonorrheal rheumatism is closely allied to polyarticular rheumatism. The only differential signs are fixation in extension and the presence of some form of gonorrheal urethritis and the finding of gonococci in the joint fluids. Arthritis secondary to scarlet fever, etc., is usually monarticular and the history of the case aids in its designation. Septic arthritis is polyarticular and similar to the lesions of arthritis purulenta and the discovery of abscess elsewhere and the clinical picture of sepsis confirm the disease. Acute osteomyelitis, especially in children, is often mistaken for rheumatism. It is useless to lay down the symptoms. He says it is a safe rule, that if the arthritis of children lasts more than ten days and is not influenced by salicylates, it is either acute tuberculosis or osteomyelitis. Syphilitic osteochondritis occurs only in congenital syphilis, and other positive signs of the condition clinch the diagnosis.

He reports a case. He mentions in this connection the growing pains and growing fevers in children which may be connected with rheumatism or rickets. If other signs of rickets can not be found it is well to hold all such cases as rheumatism. The close connection of tuberculosis with rheumatic joint affections is mentioned by many writers. If not purely irritative, the joint takes on the appearance of a tumor albus with flexion and ankylosis and presents nothing at all typical of acute polyarticular rheumatism, as shown by the case here reported.

28. **Pelvic Disease.**—Jelks notes the anatomy of the pelvic organs and calls attention to the reflex and otherwise associated disorders, those of the sympathetic or other pelvic organs with disease of the bladder for exampie, the prostatic irritation from hemorrhoids, the frequent association of caruncule in the meatus urinarius in women with hemorrhoids, etc. He considers pelvic examination incomplete without including the urethra and bladder and the examination of the urine.

29.—See article in THE JOURNAL, xxxviii, p. 1560.

30. **Tubal Gestation.**—Baldwin believes in removal of the other tube in cases of ectopic gestation. He does not favor its mere ligation as pregnancy has followed and he has had two such cases in his own experience. He prefers to remove the tube into the cornu of the uterus and he performs the same procedure in all cases where he finds pus tubes, the difference being it is completed not with the idea of preventing pregnancy, but to get rid of the entire length of the tube.

32. **Infant Feeding.**—Wentworth's article is concluded in this number. The substance of the summary is given in the following ten propositions: 1. The general statement that the upper one-fourth of a quart of cow's milk in which the cream has risen contains 10 per cent. of fat, is the average of a large number of milks, but there is too much variation in different cows to enable one to figure the milk modifications on this basis accurately. 2. This would not be of so much consequence if the percentage of fat in the cream was always low, but too much fat in modified milk is more liable to cause digestive disturbances than too little. 3. It is advisable, therefore, to have the percentage of fat determined in the cream at least once whenever the infant begins to use modified milk and to repeat this at the time of the year when the cattle's food is changed. 4. It is not advisable to modify the milk with cream in which the percentage of fat is under 10 per cent., because, if one obtains a sufficient percentage of fat in the modification, the percentage of proteids will be too high in many cases. 5. If the percentage of fat is too low in the upper eight ounces of one quart of "set milk" it is better to take fewer ounces off the top, determine the percentage of fat in these ounces and use such a number of ounces of cream as contains 12 per cent. or more of fat. If more proteid is required it can be obtained by the addition of the lower milk which is almost free from the fat. 6. A safe rule would be to have at least one determination of fat made, no matter how many ounces are taken from the top of the "set milk," and afterwards to continue to take the same number of ounces off each time. 7. In order to make a modification of milk in which a high percentage of fat is combined with a low percentage of proteid it is necessary to use a cream that contains a high percentage of fat. In general, it is better to use a cream removed from the milk at home than to use cream bought for this purpose, because the latter is much more likely to be stale and to have undergone changes due to heat or age. 8. Within certain limits, accurate percentage modifications of milk are not essential to the well-being of a majority of the babies that are fed on modified milk. Proof of this is afforded by the fact that so many infants do well when fed on modified milk and yet it has been shown by the results of analysis that these modifications are rarely accurate. Unfortunately, it is not always possible to tell beforehand to which class a given case belongs, and this is a sufficient reason, even if there were no others, for modifying the milk as accurately as possible. A complete analysis of the milk requires too much time and training to make it a practical procedure, except in special cases. The determination of the percentage of fat in the cream used for modification is easily made, requires but a few minutes to do, and enables modifications of milk to be made that are accurate enough for most cases, if in addition directions for modifying are carefully given and followed. 9. The advantage of modifications of milk furnished by establishments is that it is convenient. It relieves the family of all responsibility so far as the preparation of the infant's food is concerned. Three great objections to the use of commercial modifications of milk are: (*a*) inaccurate modifications; (*b*) stale milks; (*c*) expense. (*a*) The claim is made by those interested in the sale of commercial modifications of milk that the percentages of fat, sugar and proteids are accurately determined in each modification. This claim of exactness forms the basis upon which such commercial modifications of milk largely depend for their success. The twenty-six analyses he gives show how little dependence can be placed upon such statements. (*b*) People who reside beyond the limits of wagon delivery (and most people do so for several months each year) have to use on Sunday and a part of Monday milk that is delivered on Saturday, and of a necessity milked on Friday. It is claimed that no deleterious changes take place in these milks if they are kept cold. A sufficient number of clinical observations have been made to show that such a claim is unwarranted. (*c*) The cost of modifications of milk made at home is less than twenty-five cents a day. Compare this with the cost of commercial modifications of milk, to which must be added in many cases the cost of transportation. 10. The technic of fat determination by the Babcock method is simple and easily acquired. The entire outfit, including a centrifugal machine, flasks, pipettes and acid can be purchased for nine dollars. The time required for a fat determination by this method is about fifteen minutes.

33. **Thyroid Tumors.**—The following is a tabulated statement of the classification given by Pratt of benign tumors of the thyroid according to the plan here proposed:

I. *Simple adenoma.*—Closed vesicles filled with colloid.
The structure resembles the normal thyroid.
Colloid goiter, Cystic goiter, Fibrous goiter } Simple adenomata that have undergone secondary changes.

II. *Fetal adenoma.*—Solid masses or rosettes of epithelial cells.
Little or no colloid.
The structure resembles the fetal thyroid.

III. *Papilliferous adenoma.*—Branching papillæ lying in cystic spaces; (a) developing from the walls of old cysts; (b) true adenocystoma resembling the adenocystoma of the ovary.

34. **Tuberculosis of the Testicle.**—Thorndike has looked up some 75 cases and finds as points of value from his study that the disease is one that occurs in young adults, and in about one case out of every three, gonorrhea was the immediate cause of the tuberculous process. In only 20 per cent. of the cases were there any symptoms relating to the urinary tract and in only 16 per cent. was the vas deferens probably involved at the time of the operation. This means that the operation is performed on account of the presence of diseased foci in order to remove the active inflammatory mass, and most of the cases do not come under observation until a fairly late stage. The occurrence of complications of the vas deferens in only 16 per cent. is in contrast to the common opinion that it extends by direct extension along this duct. The clinical point suggested is the query: "Is it necessary to remove all the diseased area in order to benefit the patient? He says that he has never hesitated to operate for proper surgical indications because the disease was known to be present in other organs, and has had cases under observation which were enormously benefited by this course. Many patients will consent to a lesser procedure while absolutely refusing the greater one.

35. **Tuberculosis of the Urinary Tract.**—Gareeau has collected from various sources a total of 415 cases of operations on the kidney including 257 nephrectomies, 42 nephrotomies, 84 nephrotomies followed by nephrectomies and various nephrectomies complicated by other operations or resections. The total surviving two years or more was 58, or 14 per cent. The percentage of cases well from within a few months of the operation and, therefore, promising ones, added to the survivals of two years, make a total percentage of 58. The reason the results are not better is that renal tuberculosis is rarely pri-

mary in the kidney, and the patient who has been nephrectomized for tuberculosis should never be considered safe for the future, and he must keep himself up to the highest pitch of vigor, and keep down the disease which may be lurking elsewhere. The largest number of cases of nephrectomy was in females, which does not coincide with the autopsy records and the disproportion is remarkable. Morris explains it by saying that the co-existence of renal with vesical tuberculosis or with disease in some other part of the male genito-urinary organs, renders many men unfit for operation upon the kidney, and Garceau suggests that the greater difficulty of recognizing latent renal tuberculosis in the male may also be responsible. The majority of cases occur in the third and fourth decades of life and the miliary form is far more common. Tuberculosis of the other organs is mentioned 54 times. The type was chronic in all cases; old foci probably existed in a large number of cases and would vitiate the figures. Morris also says that old foci of tuberculosis are also found in the prostate, testicles or lungs in cases of kidney tuberculosis. It is seldom a primary disease; direct infection through the urethra is not a common event. The question as to whether the primary seat of origin of tuberculosis is in the kidney or elsewhere is noticed and from the figures it appears that the kidney is oftener affected primarily in females. There is no doubt that vesical tuberculosis as a primary disease is most frequent in males. It is possible that many male cases do not survive long enough to allow extension to the kidney, while in the females the kidney is the more common seat. The increasing use of the cystoscope will reveal more in regard to these points in the future than in the past.

36. **Tuberculosis of the Prostate.**—Crandon finds that tuberculosis of the prostate may be primary, though it is nearly always secondary to tuberculosis elsewhere in the genito-urinary tract and the infection is usually an ascending one. Its diagnosis is of importance and he remarks that prognosis is always grave. A gleet or a catarrhal prostatitis persists; there is pain in the prostate or the neck of the bladder; there may be a drop of blood in the beginning of micturition instead of at the end, as in stone. There is an increased frequency of micturition and there may be some burning. The urine is slightly turbid and contains no renal elements. The prostate is found to be soft, slightly enlarged, and tender, especially far back and including the area of the trigonum. One or both vesicles may show enlargement, but this is probably secondary. To finally rule out stone the sound should be used, but with the greatest gentleness, for nothing so serves to stir up a tuberculous process in the prostate as instrumentation. The treatment is not considered.

38. **Acute Suffocative Pulmonary Edema.**—Crummer reports a case of this condition which he thinks has been neglected in the literature to a considerable extent and asks as to whether we have in it a real pathologic entity. He concludes, from a study of the various symptoms, that we must admit it as a distinct condition. The diagnosis is important so that we may be correct in our prognosis and active in our treatment. Death may occur during any attack, but the ordinary chances are good. He attributes the favorable outcome in some of the attacks in his patients to the adrenalin chlorid which he gave.

47.—This article is editorially noticed elsewhere.

66. **Esthiomene.**—This disorder, cases of which are reported with microscopic examination by Dr. Louise Cordes, is, according to Murray, probably a disease apart from tuberculosis, lupus or syphilitic or ordinary ulcer, a condition which may be grafted upon them or result from simple abrasions. If this can be proven a new and descriptive name should be given to the disorder to avoid the confusion that prevails. The bacterial and pathologic facts of the case reported are that a streptothrix which proved to be pathogenic for white mice and rabbits and non-pathogenic for guinea-pigs was obtained from the surface of the ulcerated vulva. After one year's interval cultures were made as before and the same organism obtained a second time. This fungus invaded the epithelium bordering the ulcer and there were no signs of tuberculosis in the lymph tissue or material removed from the edge of the ulcer. The idea that this corresponds with lupus may be rejected as far as the pathologic findings go.

67. **Massage of the Breasts.**—Bacon criticises the instructions given in text-books and reviews the anatomy of the parts. The idea of breast massage is not to get rid of the accumulation of milk, but to empty the overfilled veins and lymphatics. The masseur, the patient lying on her side, begins with the axillary and subclavian regions, gradually advancing toward the center, at first quickly rubbing and stroking in a circular motion and up and down the axilla and under the clavicle. The pressure at first is very light with the fingers only increasing as the parts become less tender, and making longer and longer excursions toward the axillary space and upper border of the breast, using not only the fingers, but the palms, under parts of the hands and balls of the thumbs. With the lower hand the masseur also begins to work below the breast, and with the upper around toward the inner side. If this treatment is properly done a large amount of tenderness has disappeared and the whole manipulation is pleasant. The skin has become loose and soft and it seems one-half or one-third of the milk has escaped. The massage may be stopped at this stage and supporting bandages applied or it may be advisable to go further and massage the gland itself. This is done by a stroking movement of the fingers at first very light, and later deeper and deeper, effort being made to surround the lobes with the fingers. The fingers are not carried to the nipple but only to the outer border of the areola. Here the centripetal strokings are substituted by a circular rubbing and this massage of the gland is combined at all times with the manipulation on the outside of the gland previously described. The chief contra-indication to massage is the presence of mastitis, the possibility of dislodging masses of bacteria and transplanting them to other regions where they may become foci of trouble. Another danger is the disturbance of the inflamed area. Massage of the breast is indicated generally in the beginning of lactation only in the case of very painful, distended, non-infected breasts that can not be relieved by supporting bandages. Perhaps not more than one case in five needs massage, and then only for a day or two, but in these it is a valuable measure and gratefully received.

68. **Cystocele.**—Hirst considers the strongest support of the bladder the transverse muscle running from the junction of ischeum and pubis across the lower anterior portion of the pelvic cavity and actually inserted in the vaginal wall. This is often torn during parturition and is the chief cause of cystocele. He suggests the following operation which he has employed in some twenty cases and of which he describes the technic as follows: "The anterior vaginal sulcus on the left side is displayed by three bullet forceps making traction at the three angles of the sulcus. As the woman lies in the dorsal position on the table the sulcus is not easily accessible and can not conveniently be denuded, as it lies hidden within the vagina; but by fixing one bullet forceps alongside the orifice of the urethra, the other on the opposite vaginal wall, and the third half-way up the vaginal wall at the apex of the sulcus, the triangular area involved in the injury comes plainly into view. The triangle is marked out with a knife, and the mucous membrane is readily dissected off by scissors in one piece, which takes but a minute or two. The other side is treated in the same manner. Usually the tear is deeper on the left side and may be confined to that side. The sulcus being denuded, the sutures of silkworm gut are inserted just as they are in the posterior sulci in an Emmet operation. They are not yet united, but are clipped temporarily with hemostats. The cervix is pulled out of the vulva and the rest of the operation is performed in the usual manner for cystocele, with an oval denudation and the buried continuous tier suture of catgut. After the closure of the oval denudation, the sulci sutures are united with shot. As in every operation for cystocele, there should be a restoration of the posterior vaginal wall and of the pelvic floor, but no one should depend for support to the anterior wall upon the posterior wall alone. There is no more misleading fallacy than the idea that the anterior vaginal wall is supported almost entirely by the posterior wall. The most troublesome cystoceles to cure by operative treatment are those

in which the posterior wall has been repaired in the hopes that its restoration would support the anterior wall. Every one knows from experience that it is better to operate on the posterior wall to add to the support of the anterior wall in the treatment of cystocele, but to trust to this support alone would always prove disappointing."

71. **Infected Ovarian Cysts.**—The following are in substance Peterson's conclusions: 1. Suppuration of an ovarian cyst is a most serious complication causing a high mortality with or without operative interference. 2. The contents of every suppurating cyst of the ovary should be subjected to searching microscopic and bacteriologic examination to throw more light on the etiology and patnology of the condition. 3. There is good reason for the supposition that ovarian cysts reported as suppurating did not in reality contain pus, but that the gross appearances were due to certain changes in the fluid contents as a result of necrotic changes in the cyst wall. 4. When suppurating ovarian cysts showing definitely pathogenic bacteria have been removed by the abdominal route the majority of patients have died of general peritonitis. 5. Better results, therefore, can be expected from vaginal incision and drainage in similar cases when the suppurating cyst does not reach much above the limits of the pelvis, as the liability of contamination of the peritoneum will be greatly lessened.

78. **Bottini Operation.**—Horwitz favors the Bottini operation as it is less dreaded by the patient, more quickly performed, and generally with good results if undertaken early. It is contra-indicated when a valve-like formation exists, or where there is greatly increased overgrowth of the three lobes. It is useful as a palliative measure in cases of prostatic hypertrophy of long standing, associated with cystitis, improving the general health, relieving constipation and assisting catheter urination. Pyelitis, when present, adds greatly to the danger of the operation. It may be employed as a safe and satisfactory means of causing a suprapubic fistula to close and may be regarded, with its early use, as a prophylactic method. When operated early, before the prostate has become enlarged, the safest method is to perform a preliminary perineal cystotomy, introducing the "perineal galvano-cautery incisor" of Chetwood to make the incision in the prostate. In some instances a prolonged preparatory treatment is necessary before the operation can be safely undertaken, especially in cases that have existed for a long period, where there is chronic cystitis, the physical condition of the patient being below par. Constitutional treatment must be persisted in for months after the operation to secure the benefit from the procedure.

88. **Gonorrheal Peritonitis.**—The etiologic action of gonococci in producing peritonitis is proven, but the question of prognosis and treatment is somewhat unsettled and Hunner and Harris report cases with a study of the tabulated statement of the cases reported from the literature. They have some doubts as to the value of operation in these cases though the figures seem to indicate its utility. The clinical course of the disease is characteristic; the acute onset and unusually severe course for from one to three days, the symptoms then suddenly abate and the patient usually makes a rapid recovery, preserving as a relic an intra-peritoneal exudate, pelvic adhesions or pus tubes. They believe that its alleged greater fatality in children is due in large part to the fact that children have not received the same treatment given to adults. They do not take kindly to the absolute repose which is required and their powers of resistance are lowered. For treatment the authors recommend absolute rest in bed, hot turpentine stupes, alternating every half-hour with hot water stupes, mild catharsis, liquid diet, cold sponging for high temperature and stimulating treatment according to the severity of the case.

89. **Filariasis.**—From a study of cases observed in the Philippines Calvert says that the facts lead one to believe that in the early stages of filariasis, leucocytosis with increase of eosinophiles may be looked for, and if the disease progresses the leucocytosis and eosinophiles gradually decrease to normal.

90. **Pneumonia.**—Cole has made blood cultures in a number of cases of pneumonia and tabulates results. They do not support those of Prochaska notwithstanding the larger amount of blood used, the greater dilution and extreme care in the examination. That author's statement that the number of pneumococci in the blood has no sort of relationship to the severity of the attack, is not supported by Cole's findings. His statistics and those of most other investigators show that the organisms obtained from the more severe and fatal cases are either more numerous or more resistant to unfavorable conditions, or otherwise positive results would not be obtained only in such cases.

92.—This article has appeared elsewhere. See THE JOURNAL, xxxviii, title 28, p. 1592.

94. **Acid-Resisting Bacteria.**—The following are the conclusions of the experimental study by Abbott and Gildersleeve: 1: That the majority of acid-resisting bacteria may be distinguished from true tubercle bacilli by their inability to resist decoloration by a 30 per cent. solution of nitric acid in water. 2. That some of the acid-resisting bacteria are capable of causing in rabbits and guinea-pigs nodular lesions suggestive of tubercles. These may usually be distinguished from them by the following points: (*a*) when occurring as a result of intravenous inoculation they are always seen in the kidneys, only occasionally in the lungs, and practically not at all in the other organs; (*b*) they constitute a localized lesion, having no tendency to dissemination, metastasis, or progressive destruction of tissue by caseation; (*c*) they tend to terminate in suppuration or organization rather than in progressive caseation, as is the case with true tubercles; (*d*) they are more commonly and conspicuously marked by the actinomyces type of development of the organisms than is the case with tubercle bacilli, and these actinomyces are less resistant to decolorization by strong acid solutions than are those occasionally seen in tubercles. 3. That by subcutaneous, intravenous and intrapulmonary inoculation of hogs or calves, the typical members of the acid-resisting group are incapable of causing lesions in any way suggestive of those resulting from similar inoculation of the same animals with true tubercle bacilli. 4. That, though occasionally present in dairy products, they are to be regarded as of no significance etiologically speaking, but may be considered an accidental contamination from the surroundings and not as evidence of disease in animals. 5. That the designation "bacillus" is a misnomer as applied to this group of bacteria which are more correctly classified as actinomyces.

106. **Deformities of the Face.**—In the continuation of Talbot's article he describes the various causes of nasal deformities and their general evolution. He concludes that the mode of respiration affects the development of the bones in many ways, but mouth breathing is liable to be the result of excessive development of the turbinates, arrest of nasal cavities and, with adenoids, is the result of an unstable nervous system. That the patient may breathe through the mouth the lower jaw drops slightly; this causes the alveolar process to elongate, carrying the teeth with it, hence the high vault.

107. **Thiosinamin.**—Beck from his experience in 14 cases finds that the injection of thiosinamin without mechanical treatment does not improve in cases of ear disease except to relieve the tenderness to some extent, but that with the aid of electrolysis and the thiosinamin injections the simple Eustachian bougie can be passed with much greater ease and inflation is much easier than without these agents. All the cases thus treated improved in the time of two to eight months. When using thiosinamin careful inquiry should be made for possible contra-indications such as the co-existence of chronic tuberculosis, malignant tumors, and scars which support the abdominal organs in the abdominal wall such as those left after laparotomy and hernia.

116. **Summer Diarrheas.**—The various causes of summer diarrhea, viz., the bacterial micro-organisms, are noted by Heiman. They are assisted by low vitality or pre-existing catarrhal conditions, the state of the mucous membrane brought on by the heat and humidity and still other factors, like improper feeding, improper surroundings which reduce the bactericidal power of the blood. The feeding is the most important question and the diet, therefore, should be specially

cared for. Overfeeding is to be avoided and pure milk is a necessity, with pure air and healthy and hygienic surroundings. He believes that with attention and proper legislation as regards the construction of tenements, the providing for playgrounds, etc., these diseases may soon be under control.

117. **Summer Diarrhea.**—The treatment of summer diarrhea is noticed at length by Kerley, who insists on the importance of recognizing the danger of gastro-intestinal derangements of infants during the hot months and the need of immediate treatment. The mothers must be instructed to stop the milk and give a dessertspoonful of castor oil at the first suggestion of diarrhea.

118. **Intubation Instruments.**—Nicoll argues for the value of the original O'Dwyer tubes as against the modified ones since introduced. He thinks they conform to the anatomy of the child's larynx and the modifications that have been made are of no advantage and the operations of intubation and extubation are rendered more difficult, especially in very young children, by their adoption.

123. **Vaccination.**—Welch and Schamberg discuss the typical vaccinia and the spurious forms which are confounded with it, describing the different types. They consider that the local reactions described as vaccinia by Hervieux are dubious as protection, as smallpox has developed in individuals who had the reaction and who had been regarded as genuine takes. They also believe that the glycerinized virus is much more sure than the dry points. It is impossible, they hold, for a person who has been recently successfully vaccinated to contract a severe case of smallpox. When the vaccination is performed soon after exposure to smallpox, absolute protection is not infrequently conferred, but the delay of a few days may impair the immunity.

133. **Obesity.**—Von Noorden remarks as to the indications for the treatment of this condition that, in people who have been obese all through life or for several decades any reduction cure is contra-indicated, especially if the subject is over 60 years of age. A moderate amount of obesity, as about 15 to 25 kilos more than the average for age, sex and height, is the most frequent form and most amenable to treatment. The patients are generally in the third to the sixth decades of life and the rate of increase is a matter of importance. When it progresses slowly, or rapidly, but steadily, then restrictive changes in the mode of life are necessary, but if it remains the same for a long time then the external conditions are to be considered. If these impose the risks of exposing the patient to the dangers of alcoholism or other influences or to any irregular mode of life, or the patient can not be relied upon to keep within the bounds of moderation, then an unfavorable strengthening of these influences is to be feared from obesity, and it should be checked. The beginning treatment may be with a rapidly working dietetic or mechanical cure. But the best thing is to regulate the manner of living by set rules so that further deposit of fat is prevented, and that which is already present becomes diminished. The treatment should be continued and it is no use to temporarily reduce the condition. In healthy persons who are no longer exposed to any particularly exhausting and irritating influences in their daily life, especially in sedentary individuals and women, there is no special indication for the removal of moderate obesity. The discomfort of giving up old habits, changing the manner of living as well as other exhaustions and deprivations will hardly be balanced by the improvement. Unless there are constant warnings of trouble reduction is not important. The best method is the old-fashioned one of instituting short cures of four or five weeks' duration, at long intervals, and he mentions especially the gain to be derived from treatment in institutions, not the ordinary watering and bathing places, but special institutions that have an educational effect. A slight degree of obesity does not require the reduction cure in healthy cases. Still, we should regard the patient's wishes if we can do so without harm, and if vanity will assist in ensuring the proper moderation and abstention from harmful habits, the excessive ingestion of sweets, beer-drinking and laziness, it is no objection to thus utilize it. He speaks in conclusion of the unfavorable results sometimes following the reduction of abdominal fat in women, viz., constipation, hernia, prolapse of the stomach, sometimes of the uterus; gallstones may also occur from this cause. These drawbacks appear more frequently in the mild than in the severe forms of corpulence, where the cure is less often carried to the points where abdominal pressure is markedly changed and the viscera subjected to injurious pressure. Sometimes abdominal massage will assist in the cure. Summarizing, he says that slight degrees of obesity do not urgently demand a cure, but that for various reasons, and to prevent the development of the more severe grades of obesity, they frequently make such a cure desirable. Of all the methods the slow ones are to be preferred, especially in young people and in women in whom the abdominal fat must be decreased.

134. **Prolapsed Kidney.**—Goelet holds that prolapse of the kidney is much more frequent than supposed, giving rise to misleading symptoms, and is serious as it interferes with the circulation and tends to cause organic disease of the kidney, maintains pelvic congestion and is, therefore, a cause of disease of the female pelvic organs. Minor degrees of prolapse become inevitably exaggerated in time. Artificial supports such as belts and pads are not only of no permanent benefit, but, on the contrary, are positively harmful. The only true relief is by operation which is without risk and should be performed before the kidney has become seriously disabled.

141. **Intestinal Anastomosis.**—From a study of the subject Bartlett concludes that the best control of the contents of the gut is obtained by the Halsted lateral method under which all sutures are introduced before the intestine is opened. For sufficiency of the new opening the lateral opening can be larger at first, but the ultimate results are not necessarily so good and, in fact, the opening is more likely to be contracted. Gangrene of the gut ends is less likely in the lateral methods as there is less interference with the blood supply, and as regards leakage this depends not so much on the choice of the operation as upon the operator's technic. So far as the small intestine is concerned, he remarks, therefore, that it is not possible to say that one method is better than the other, but the lateral operation is primarily easier and safer, while the end-to-end method is certain, in skilled hands, to give the better ultimate results.

147. **Prostatic Hypertrophy.**—Dedman reviews the literature of the subject and holds that it is a mistake to put off operation too long. Whenever the enlargement becomes of sufficient size to prevent urination or to cause a large amount of residual urine and the use of the catheter, operation is called for. In the very old or very weak the Bottini operation is the one of choice. In all cases where the major part of the hypertrophy is intravesical the Bottini operation is the best. In enlarged or pedunculated middle lobe and slight lateral enlargement, the suprapubic operation is the best. In cases of enormous hypertrophy of the whole gland or in considerable lateral lobe enlargement, the perineal operation gives the most relief.

152. **Immunity.**—According to Vaughan the most important factors in natural immunity to bacterial infection are the following: 1. Inability on the part of the micro-organisms to multiply in the animal body. 2. The destructive action of the phagocytes on the invading micro-organism. 3. Plasmolysis, or the destruction of the invading cell on account of the composition of the new medium in which it finds itself placed. The subject of natural immunity to toxins is also discussed and Ehrlich's theory described at length. Antitoxins are not modified toxins but are the product of certain cells of the body, produced by the stimulation of these cells by the toxin. He thinks there is reason to continue in our work and to hope for more general brilliant results in serum-therapy than have yet been obtained.

153. **Chicken-pox in Adults.**—Ferguson holds that varicella is a disease of childhood because everyone is exposed to it and few escape, but it is likely to occur in the non-protected adult. There is no natural immunity conferred by puberty. He has in the last two years seen five cases in persons past that period.

160. **Tuberculous Chest.**—The author's views are given in substance as follows: The shape of the tuberculous chest instead of being flat, as we have from time immemorial been assured it is by all authorities, both lay and professional, is, on the contrary, round. Its antero-posterior diameter, instead of being diminished relatively to the transverse, is actually increased; hence the term "flat-chested," as applied to the consumptive, is really a misnomer. This round chest is the normal type met with in persons between the ages of fifteen and eighteen years. As seen in "tuberculous adults," therefore, it represents a persistent immature chest.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below.

British Medical Journal (London), June 28.

1 *Some Phases of Inflammation of the Appendix. Frederick Treves.
2 Enterostomy Contrasted with Artificial Anus. Arthur E. Barker.
3 Duodeno-choledochotomy for Retained Gallstones at the Duodenal End of the Common Bile Duct. Henry B. Robinson.
4 A Case of Removal of the Gall-Bladder. F. A. Southam.
5 The Operation of Jejunostomy, with a Report of Two Cases. B. G. A. Moynihan.
6 Localized Peritonitis in Enteric Fever with Marked Symptoms of Onset Laparotomy; Recovery. W. A. Mackay.
7 Perforation of the Appendix Within a Hernial Sac; Resection of the Cecum and Ileo-cecal Junction; Recovery. J. Basil Hall.

The Lancet (London), June 28.

8 Inflammation of the Vermiform Appendix. Frederick Treves.
9 Some Points in Practical Surgery Suggested by the Study of the Life and Work of John Hunter. Reginald Harrison.
10 *A Note upon Amputation of the Hip-Joint. Edmund Owen.
11 *The Fixation of Movable Kidney by Means of Strong Carbolic Acid—Six Cases. Thomas Carwardine.
12 Further Notes on the Use of the Naso-pharyngeal Tube for Prolonged Nitrous Oxid Anesthesia. Harvey Hilliard.
13 *On the Treatment of Incipient Broncho-Pneumonia in Infants. Theodore Zangger.
14 *Some Experiments on the Precipitins. Aldo Castellani.
15 Some Practical Points in the Treatment of Congenital Torticollis. E. Noble Smith.
16 Brief Notes on Three Cases of Autointoxication; One Fatal. A. B. Duprey.

Journal of Tropical Medicine (London), June 16.

17 The Classification of the Anophelina. Fred V. Theobald.
18 *Peculiar Marking of the Tongue in Ankylostomiasis. Percy H. Delamere.
19 Quinin Idiosyncrasy Leading to Hemoglobinuria. Aubry Hodges.
20 The Sleeping Disease. (Continued.)
21 *Duration of Latency of Malaria After Primary Infection, as Proved by Tertian or Quartan Periodicity, or Demonstration of Parasite in Blood. (Continued.) Attilio Caccini.
22 Three Lectures on Bilharzia. (Continued.) Frank Milton.

Australasian Medical Gazette (Sydney), May 20.

23 On the Diagnosis of Erythromelalgia and Raynaud's Disease. R. Scot Skirving.
24 Puerperal Sepsis: Its Pathology and Treatment. William S. Eyrne.
25 Pregnancy in a Double Uterus—Removal of Pregnant Portion. M. Jay.
26 The Treatment of Puerperal Eclampsia. G. Cuscaden.
27 Glioma of the Retina—A Remarkable Family History. R. Earle Newton.
28 The Rational Method of Sewage Disposal. T. Mailler Kendall.
29 A Method of Obtaining the Urine Separately from Each Kidney, and Its Value in the Diagnosis of Some Diseases of the Urinary Tract. H. L. Maitland.
30 Some Points in Nephrectomy. J. B. Nash.
31 The Roentgen Rays, with Special Reference to Renal Radiography. L. H. Harris.
32 Notes on the Epidemic of Typhoid Fever in Brighton, Victoria. Wm. Macansh.

Intercolonial Medical Journal of Australasia (Melbourne), May 20.

33 Recent Advances in Our Knowledge of the Digestive Organism. C. J. Martin.

Bulletin de l'Academie de Medecine (Paris), June 10.

34 *Report of Committee on Alcoholism. J. V. Laborde.—Rapport sur les boissons spiritueuses, liqueurs, apéritifs, et leurs essences et produits composants les plus dangereux.

June 17.

35 Sur la piroplasmose canine. Propriétés du sérum des animaux immunisés. Nocard (Alfort).

Bulletin Medical (Paris), March to May.

36 (No. 19.) Massothérapie. Dagron.
37 (No. 20.) *Surgical Treatment of Large Carbuncles. R. Loewy.—Traitement chir. des anthrax larges.
38 (No. 21.) *Tests of Gauze Drains. P. Vignard.—Recherches sur le meilleur mode de pansement et de drainage des plaies par les divers variétés de gaze.
39 (No. 25.) *Note sur une forme d'osteomyelite grave polymicrobienne non suppurative. Lannelongue.
40 (No. 26.) *La radiculalgie meningopathique. A. Chipault.
41 (No. 29.) Du traitement de la tuberculose par l'urée. Morin.
42 (No. 30.) Access to Tuberculosis of the Sacrum by the Sciatic Notch. E. Damas.—Tuberculose sacrée abordée par la voie de l'échancrure sciatique.
43 (No. 32.) *Pyrogallic Acid in Affections of Urinary Passages. H. Minet.—Les instillations d'acide pyrogallique dans certaines aff. des voies urinaires.
44 (No. 33.) Emphysème et tuberculose pulmonaire. A. Deléarde.
45 (No. 36.) Dangers de la suralimentation carnée chez les enfants de souche arthritique. C. Leroux.
46 Elimination du mercure par les voies lacrymales. L. Donat.
47 (No. 38.) Maladies des fosses nasales. A. Malherbe.
48 (No. 39.) Le cytodiagnostic dans les méningites. H. Mery.
49 (No. 40.) Traitement de l'infection puerpérale par l'hystérectomie abdominale. L. Picqué.
50 (No. 41.) La radioscopie dans la pratique journalière. L. R. Regnier.
51 (No. 42.) *Treatment of Recurring Pleural Effusions by Injections of a Gas. Vaquez and Quiserne.—Traitement des épanchements pleuraux à répétition par les injections gazeuses.
52 (No. 43.) De l'albuminurie massive due à la compression des uretères par tumeurs fibreuses intrapelviennes. L. Dauvergne.

Bulletin Soc. Med. des Hop. (Paris), May 15 to June 19.

53 (No. 16.) *Retention des chlorures dans les néphrites. C. Achard.
54 *Les Phosphates urinaires dans quelques états aigus. C. Achard.
55 (No. 17.) Les agents pathogènes des septicémies métadiphthériques. Deguy.
56 (No. 18.) *Syndrome oculo-pupillaire dans la tuberculose. A. Souques.
57 (Nos. 19 and 20.) Traitement de la chorée. J. Comby.
58 *Trunecek's Serum in Arteriosclerosis. Merklen.—Des indications du sérum de T. chez les artériosclereux.
59 Procédé simple pour la mesure des épanchements pleuraux. C. Achard.
60 (No. 21.) Relations entre les troubles pupillaires, la syphilis, tabes et paralysie gén. Dufour.

Presse Medicale (Paris), May 28 to June 18.

61 (No. 43.) L'édème segmentaire. Debove.
62 (No. 44.) Les angines à bacilles de Friedlander. C. Nicolle and A. Hebert.
63 Value of the Dowsing Electric Lamp in Therapeutics. F. Allard.—La chaleur radiante lumineuse appliquée à la thérapeutique.
64 (No. 45.) Strangulated Inguinal Hernia in Children. A. Broca.—Hernie ing. étranglée chez l'enfant.
65 To Fasten the Retained Catheter. J. Escat (Marseilles).—Fixation de la sonde à demeure.
66 (No. 46.) Les chocs électriques. L. Tollemer.
67 *Traitement du coryza atrophique ozénateux par les injections interstitielles de paraffine. Brindel (Bordeaux).
68 (No. 47.) Les différents procédés d'anesthésie chirurgicale. Chaput.
69 *Traitement des atrophies musculaires reflexes d'origine articulaire. A. Zimmern.
70 (No. 48.) Alopecia Areata. F. Tremolières.—Etiologie et pathogénie de la pelade. Théorie dentaire de L. Jacquet.
71 *Bladder Urine Separator. F. Cathelin.—Le diviseur vesical gradué.
72 (No. 49.) *Ultimate Results of Trunecek's Serum. Mineral Powder. Leopold-Levi.—A propos du serum de T. Lavements. Poudre minerale.
73 Tonsillectomy by Morcellement. G. Mahu.—Le morcellement des amygdales palatines.

Semaine Medicale (Paris), June 18 and 25.

74 (No. 25.) *Accidents of Lumbar Puncture and Means to Avoid Them. G. Milian.—Les accidents de la ponction lombaire et les moyens de les éviter.
75 (No. 26.) *Existe-t-il en clinique des localisations dans la capsule interne? P. Marie.

Centralblatt f. Allg. Path. (Freiburg), xiii, January to May.

76 (No. 1.) Absorption of Fat in Intestines and Its Transportation to Other Organs. D. P. Kishensky (Moscow).—Zur Frage der Resorption des Fettes im Darmkanal und ueber den Transport desselben in andere Organe.
77 Ueber die Bedeutung der Fermente für die Pathologie. Review of 23 recent articles. M. Jacoby (Heidelberg).
78 (No. 2.) Ueber Transplantation von Embryonalgeweben ins Ovarium und die Bildung von Ovarialcysten. R. Traina (Turin).
79 (No. 3.) Compensating Hypertrophy of Suprarenals. M. Simmonds (Hamburg).—Weitere Beobachtungen ueber compensatorische Hypertrophie der Nebenniere.
80 Fibrinoid Transformation. O. Israel (Berlin).—Zur fibrinoiden Umwandlung.
81 (No. 4.) Experimental Changes in Bones from Infection. B. Morpurgo (Siena).—Durch Infection hervorgerufene malacische und rachitische Skeletveränderungen an jungen weissen Ratten.
82 Zur Anwendung der plastischen Reconstructionsmethode in der path. Anatomie. W. Petersen (Heidelberg).
83 Production of a Serum Specific for the Thyroid Gland. N. Gontscharukoff (Kiev).—Ueber die Herstellung eines für die Schilddrüse specifischen Serums.
84 Zur Geschichte und Literatur der Neurofibrillen. H. Vogt (Göttingen). Review of 241 articles.
85 (No. 5.) Treatment of Wounds of the Brain. C. Chenzinski (Odessa).—Zur Frage ueber die Heilung der Hirnwunden.

86 (No. 6.) Ein Carminfärbung der Axencylinder welche bei jeder Behandlungsmethode gelingt. E. Chilesotti.
87 Chorioepithelioma malignum. M. Munzer (Breslau).—Collective review.

Centralblatt f. d. Grenzgebiete (Jena), June 9.

88 *Ueber cystische Tumoren des Peritoneums. V. Blum.—Critical summary.

Centralblt. f. Chirurgie (Leipsic), June 7 to 21.

89 (No. 23.) Horizontale Gastroduodenostomie. C. Nicoladoni (Graz).
90 (No. 24.) *Paraffin as a Protecting Dressing. C. Springer (Prague).—Ein neuer Deckverband.
91 *Ultimate Results of Forcible Reduction of Spondylitic Hump. Vulpius.—Dauererfolge des Redressements des spondylitischen Gibbus.
92 (No. 25.) *Spatula Forceps for Laparotomies. J. Bakes (Trebitsch).—Eine neue Spatelzange für Laparotomien.
93 Zur Technik der Uretero-pyelo-neostomie. A. Krogius (Helsingfors).

Dermatologische Zeitschrift (Berlin), ix, 5.

94 Erythema scarlatiniforme desquamativum recidivans. J. Kramsztyk (Warsaw).
95 Die Parrot'schen Pseudoparalyse bei angeborener Syphilis. F. Scherer (Prague).
96 Betrachtungen ueber das Iodipin. E. J. Feibes (Aix).
97 Toxicity of Serum in Pellagra. G. Antonini.—Untersuchungen ueber die Toxicität des Blutserums bei frischer Pellagra, und ueber die antitoxische Kraft des Blutserums geheilter Pellagrakranker.

Therapeutische Monatshefte (Berlin), June.

98 *Relations Between the Cure of Tuberculosis and a Joint in the Costal Cartilage. W. A. Freund.—Die Beziehung der Heilungsvorgänge gewisser Formen der Lungenphthise zur Gelenkbildung am ersten Rippenring.
99 *Tetanus nach Gelatineinjection. Krug (Cassel).
100 History of Cacodylic Medication. G. Edlefsen.—Zur Geschichte der Kakodylsäurebehandlung.
101 Dionin in der gynaekolog. Praxis. O. Frankl (Vienna).
102 Modified Method of Cupping. S. Rubinstein.—Eine modificirte Methode des Schröpfens.
103 Tests of Wassmuth's Inhaler. V. Gerlach.—Untersuchungen ueber den Wassmuch'schen Inhalationsapparat.

Zeitschrift f. Orthopaedische Chirurgie (Stuttgart), x, 2.

104 *Treatment and Origin of Scoliosis. L. Wullstein (Halle).—Die Skoliose in ihrer Behandlung und Entstehung nach klin. und exp. Studien.

L'Egypte Medicale (Alexandria), April to June.

105 (No. 10.) Successful Talma Operation. J. Roger.—Déviation chirurgicale du sang de la veine porte dans un cas de cirrhose hypertrophique du foie d'origine cardiaque.
106 La lithotritie moderne. Kallionzis (Athens).
107 Sérothérapie et infections puerpérales. N. Edde (Cairo).
108 (No. 11.) De la rachicocainisation. Latis.
109 Diagnostic de la grossesse extra-uterine. A. Ralli.
110 (No. 12.) Cas de pygopage. E. Pfister (Cairo).

Grece Medicale (Syra, Greece), March 21 to May 15.

111 (No. 9.) Contribution à l'étude de la fièvre typho-palustre. S. A. Gavalas.
112 (Nos. 13 and 14.) *Traitement de la péritonite tuberculeuse par la méthode de Galvani. E. Pernot.

Gazzetta degli Ospedali (Milan), June 8 and 16.

113 (No. 63.) *Diabete mellito. E. De Renzi.
114 Contributo allo studio dei tumori delle glandole retroperitoneali. C. Mastri.
115 Tumori ombelicali. A. Mori.
116 Sulla pressione cardio-vascolare. G. Boeri.
117 (No. 66. De Giovanni number.) *De Giovanni's Method of Treating Scrofula of the Abdomen.—Sulla Cura della scrofulosi abdominale.

Lo Sperimentale (Florence), lvi, 2 and 3.

118 (No. 2.) Contributo alla conocenza della funzione dei reni. F. Bottazzi.
119 Electrolisi delle sostanze proteidi. V. Grandis.
120 *Sopra alcuni casi di endocardite diplococcica del cuore destro nel adulto. G. Strada.
121 Contributo allo lesioni prodotte dal fungo raggiato. F. Colzi.
122 Composizione dei liquidi d'idrocele. O. Marchatti.
123 Chimica fisiologica dei grassi. G. Coronedi.
124 Alterazioni istologiche provocate da soluzione metalliche colloidali o elettroliticamente dissociate. G. Galeotti.
125 (No. 3.) Contributo sperimentale allo studio della coagulazione del sangue. E. Persano.
126 Sulle minute alterazioni del pancreas consecutive alla legatura del condotto di Wirsung. N. Tiberti.
127 Organic Compounds of Iron in Liver. L. Beccari.—Sui composti org. di ferro del fegato.
128 Intorno all'azione di un micro-organismo patogeno isolato dal "Murex Brandaris" sui tessuti animali. N. Tiberti.

Hospitalstidende (Copenhagen), May 7 to June 11.

129 (No. 19.) *Cancer Research. C. O. Jensen.—Nogle Forsog med Kraeftsvulster.
130 (No. 20.) Et tilfaelde af malign Tumor i Glandula thyreoide med Undersoegelse af Hypophysis cerebri. H. Seidelin.
131 (No. 21.) Campaign Against Tuberculosis. H. Roerdam.—Kampen nod Tuberkulosen.
132 (No. 22.) Intoxikationspsychosernes Systematik. P. Helberg.
133 (No. 23.) En nem Metode at reponere Luxatio coxae paa. H. Vilandt.
134 (No. 24.) Til Diazoreaktionens Teknik. N. G. Kaaber.
135 Om Precipitinerne. T. Madsen.

---

1. **Appendicitis.**—This Cavendish lecture by Frederick Treves considers the subject of appendicitis, a name which he criticises, but holds that it has gained its place in medical nosology. Our real recognition of the true pathology of pericecal peritonitis is due, he holds, largely to the monograph of Fitz published in 1886. Previous to that the disease existed, but had not been properly recognized, notwithstanding that certain others like Melier and Burne had called attention to its existence. The disease is essentially a variety of peritonitis and appendicitis is not in evidence, and indeed does not exist until the peritoneum is implicated. He lays down the proposition that the extensively inflamed appendix leading to great thickness of its walls and ulceration of its mucosa and some degree of stenosis may exist without any symptoms whatever, the attack, when it occurs, indicating implication of the peritoneum. In the second place an acute attack of appendicitis may be preceded by minor seizures of short duration, sometimes severe, which are sometimes known as appendiceal colic, but which depend on changes in the appendix short of actual involvement of the peritoneum, and the most severe of these are really an attack of appendicitis in miniature. In a third series of cases the patient has an abiding trouble in the right iliac fossa, which may continue for months and may or may not be associated with acknowledged attacks of appendicitis. Where such attacks are lacking it may be called true appendicitis because there is little doubt but that the symptoms are due to abiding gross changes in the vermiform process which have never spread in an abrupt manner to the peritoneum. These patients are never well, but they are never so acutely sick as the ordinary attack would imply. The condition of the appendix in these cases will vary greatly and it may be normal externally, but inflamed internally. It may contain concretions or be twisted or bent on itself. It is not possible to predict the state in which the appendix will be found from a mere study of the clinical manifestations. Treves thinks that very little can be profitably done as regards the existence of elaborate divisions and subdivisions of appendicitis. The few peculiarities which may be claimed for the appendix are mainly these: It ends in a blind extremity. It favors the formation of concretions. It is liable to gross disturbance of its blood supply from torsion. Its utter destruction leaves no function impaired. The etiology of the trouble is discussed. It is most common in the young, especially in males. It seems to be favored by life in a tropical or subtropical country on account of the intestinal troubles that are liable to occur. In female patients the outbreak of the attack is frequently coincident with the menstrual period. The appendix and right ovary are often found in close contact and may be adherent to one another. The lymphatics of the two structures are closely allied. There is little doubt but that the ovary may be infected from the vermiform process; it is possible also that the appendix may be infected from the ovary. In removing the appendix in the female it is well to examine at the same time the right ovary as sometimes both organs are found involved; sometimes the symptoms are really due to the ovary. The most common and most conspicuous factor, however, in the etiology, is the loaded cecum due to the lodgment of indigestible food, irregular habits, etc.; the swallowing of seeds and small foreign bodies has relatively nothing to do with the production of the condition. The importance of McBurney's point is discussed. The anatomy of the parts is shown, and it appears that the structure peculiar to the right side which comes more or less closely under McBurney's or Monroe's points is the ileocecal valve. Treves mentions a possible phantom appendicitis due, no doubt, to muscle structures which is sometimes observed. As regards the operative treatment Treves is more conservative than some surgeons. He thinks the best data that could be obtained to determine the importance of the necessity of operation will be from the experience of a large number of medical men in their general practice or in systematic records of the army in time of peace. Hospital data are not to be relied upon so exclusively. He deprecates somewhat the indiscriminate operation, holding

that the misleading use of terms and unjustified analogies are sometimes used in supporting the demands for operation. The greater proportion of cases of appendicitis recover spontaneously. It is probable that the general mortality of the disease, including all grades, is not above 5 per cent. Operations during the acute attack are attended with considerable risk to life, probably expressed by a mortality of 20 per cent. or more. It must be remembered that relapses may occur after operation carried out during the acute attack. During the quiescent period the removal of the appendix is attended with minimum risk, which may be expressed by a mortality of 1 in 500. Therefore, our knowledge of the pathology of the disease and its general mortality will not sanction the opening of the abdomen in every case as soon as the diagnosis has been established. In the ultra-acute cases immediate operation is required, and in every case in which there is reason to believe that suppuration has taken place; outside of these cases he holds that the question of operation may be kept in abeyance for a few days after the onset of the attack, and should be left open for decision until the fifth day or after. He has removed the appendix in the quiescent period in 1000 cases, with two deaths, and he holds it is desirable when the patient has had one distinct attack that the appendix should be removed when the active phenomena have subsided. Its removal, however, is not a panacea for all ills or even for all those manifested by seizures of pains of the lower segments of the abdomen.

9. **Amputations at the Hip-Joint.**—Owen suggests the utility of primary ligation of the common femoral vessels in amputation of the hip-joint and then cutting straight across the thigh a little above the middle and enucleating the remaining part of the femur through an incision running down from the top of the great trochanter.

10. **Movable Kidney.**—Carwardine has adopted for nephropexy what he considers an improvement on scarifying and peeling of the renal capsule. It consists in freely painting the whole surface of the kidney, except the hilum, with the strongest liquid carbolic acid so that the surface becomes covered with granulations within a few days. The painting is best done after the supporting sutures, etc., have been inserted, but before they are tied, by means of a swab containing the liquid not in excess. He has been able to watch the surface of the kidney from ten days to three weeks in four cases and has observed granulation and lymph rapidly form. They are followed by firm and immediate incorporation of the kidney with the surrounding tissue. He tabulates his cases and illustrates the method.

12. **Broncho-Pneumonia in Infants.**—At the very first onset of pneumonic symptoms with high temperature, diminished resonance, with small noncrepitant or crepitant râles, apathy and increased pulse and respiration, Zangger gives a bath of 86 F. for two minutes, then slightly reduces the temperature of the bath by adding cold water for from two to three minutes until a temperature of 76 is reached. He rubs the body of the patient with a sponge, cloth or the hand to produce reaction of the skin and reduce the body heat. The bath need not and should not in the cases of feeble children cover the whole surface of the body, but the water can be sponged over the chest, the patient lying in the arms of an assistant. If definite pneumonic symptoms be present the bath may have to be repeated at intervals of eight to twenty-four hours. The cross packs (*Kreuzbinden*) will relieve the symptoms of bronchitis. He uses them extensively in incipient phthisis, but they give excellent results and naturally prompter ones, in simple uncomplicated bronchitis. The following is the method of their application: "A linen bandage about one and a half inches broad for infants and five inches for adults, and from two to three yards long, is placed in cold water (from 34 to 60), is well wrung out and is applied to the chest thus: 1, beginning under the right axilla, passing over the right clavicle and round the chest back to the right axilla; 2, from here round the chest horizontally; 3, from the right axilla to the left and over the back and left clavicle to the front (or left axilla). This bandage is covered in the same way with a thick single, or thin double, flannel bandage perhaps half an inch broader. This 'pack' is applied at night and left till morning; on removing it the chest must be well rubbed with a cold, wet towel and then rubbed dry." He claims that the tepid baths are far superior to the chest packs so universally recommended, which harass the child, disturb its sleep, especially if frequently changed, trouble the attendants and if continued day after day tend to weaken the patient, especially if alternated with cold, wet friction. The temperate bath is not merely palliative, but curative. It excites the circulation and relieves the congested internal organs and improves the circulation, thus causing stimulation of the heart and nerve centers, promotes defecation and especially diuresis, thus eliminating toxic substances.

13. **Precipitins.**—From a number of experiments here tabulated, Castellani claims the following conclusions: "1. The blood serum of animals treated with different preparations of natural albumins contains specific precipitins for the albumins. 2. The blood serum of animals treated with unfiltered bacterial cultures produces a precipitate in filtered cultures of the same bacteria. 3. The serum of animals treated with filtered cultures of bacteria likewise develops specific precipitins which produce precipitins in the filtered cultures of the same bacteria. 4. An exception was in the case of diphtheria cultures, the injection of which did not lead in my hands to the production of precipitins. 5. Animals which are treated with dialysed typhoid cultures develop the specific precipitins in their serum. 6. There is a close connection between the agglutinins and the precipitins."

17. **Ankylostomiasis.**—Delamere has observed a peculiar marking on the tongue in incipient ankylostomiasis, as observed by him in Leguan, British Guiana. All the patients had a peculiar mark, such as if they had wiped it with a purple or blue-black ink, which gradually fades away under treatment, but may last for six weeks or more. If this is an early sign of pronounced anemia it will be of great value in the recognition of these cases.

19. **Sleeping Sickness.**—This subject is discussed at length in a report to the Portuguese Minister of Marine by the scientific committee sent to study the disease, the article being concluded in this issue. Their special conclusions are that sleeping sickness is a meningoencephalic infection, and that it is due to a microbe which they term the diplo-estreptococcus.

20. **Latency of Malaria.**—The conclusions of Caccini's article are: "1. Malarial infection admits of relapses at short or long intervals. 2. In attacks at short intervals the period of latency approximately equals the period of incubation, and therefore: (*a*) In spring tertian it varies from one to eighteen days; (*b*) in malignant tertian it varies from five to eighteen days, but generally occurs between the fifth and ninth days; (*c*) in quartan, the duration of the period of latency is undetermined, for the latency ceases on the intervention of any of those conditions which we have seen to be the determining cause of relapse. 3. Quinin treatment influences the duration of the period of latency to the extent that, in patients who have followed it systematically, the latency reaches its maximum duration, and in these the number of attacks are fewer. 4. The quinin treatment has no influence to prevent attacks at long intervals. 5. Attacks at a long interval invariably presuppose the intervention of a determining factor. 6. In spring tertian the attack at a long interval has a period of latency varying, as far as I could ascertain, from three to thirteen months. 7. In quartan the attack at a long interval is not clearly differentiated from that at a short interval; both are influenced by the kind of relapse and the importance of the intervening accidental factor, therefore the latency does not cease until the appearance of the latter. 8. The attack at a long interval in summer malaria may be said to have a latency varying between two and eight months, always remembering that the maximum limit of eight months was only found by us in one case—that of a patient suffering from summer infection, with fever of a quotidian type. 9. The attack at a long interval is very frequent in spring tertian and rare in quartan (if only because of the difficulty with which the patient can escape some determining factor of relapse, seeing the special obstinancy of quartan infection and its peculiar liability to relapses). 10. Tertian spring and quartan infection are more tenacious and liable to relapses.

The prognosis with regard to relapses is much more serious than in malignant tertian, though the symptoms of the latter are more serious and dangerous, the attacks recur readily at short intervals, but there is no relapse at a long interval, or it is most exceptional after two months apyrexia."

34. **Report of Committee on Liqueurs, Etc.**—This report emphasizes the dangerous character of absinthe, chartreuse and other spirituous beverages, as determined by scientific analysis of the ingredients, many of which are actual poisons. The committee appeals to the public authorities to add spirituous beverages, liqueurs, and "aperitifs," their essences and ingredients, to the list of poisons only to be dispensed by druggists, or to decree other legislative measures to control their manufacture, circulation, advertisement and sale.

37. **Surgical Treatment of Large Carbuncles.**—Loewy refers to large, malignant carbuncles which require extirpation. He has treated ten patients by the method described, including some with diabetes or albuminuria and some very aged. The cure was invariably rapid and complete, with no loss of skin and merely two insignificant linear scars as relics of the lesion. When it is at the back of the neck, for example, he incises the skin over it horizontally and vertically at right angles, making the incisions 10 to 14 cm. in length. Each of the four triangular flaps thus made is turned back in turn and the infiltrated tissue beneath is extirpated. The raw surfaces are then gone over with the thermocautery and the field copiously rinsed with a 1 per 2000 solution of potassium permanganate or hydrogen dioxid, and the flaps replaced and sutured. Lannelongue also follows this method and his experience has been equally favorable.

38. **Tests of Gauze Drains.**—Vignard found in his tests that the absorbing capacity of gauze is much impaired by impregnation with a disinfecting substance. Plain white gauze is five times more absorbent than iodoform gauze, and twice more than any other gauze not dressed. Undressed gauze has no capillary attraction.

39. **Non-Suppurative, Polymicrobian Osteomyelitis.**—Lannelongue has witnessed a number of cases of this acute osteomyelitis for which early and extensive trephining is the only method of relief and may save the joint otherwise doomed. It is infectious to an extreme degree. In most cases an entering point for the microbes can be discovered in some abscess, pimple, or even a scratch in the region, occurring about two weeks before development of the osteomyelitis. He relates as a typical instance the case of a healthy girl of 14 who had ulcerating chilblains. Three weeks later the hip-joint became intensely painful with high fever and delirium at night. The hip was trephined but nothing except pure blood escaped then or later. The temperature fell at once. It rose again the next day and wavered between 39 and 40.2 C. for several days as several small abscesses formed in the arms and shoulder. Each was incised and pus evacuated. Pneumonia then developed on one side, after which the patient rapidly regained complete health.

40. **Meningopathic Radiculalgia.**—Chipault has observed six cases of neuralgia of the nerve-roots of rheumatic, traumatic or syphilitic origin. If medical measures fail, the only effective treatment is intradural resection of the posterior roots, which can be accomplished without difficulty. He found in all the cases operated on that the vertebral arches were exceptionally friable, which much facilitated the intervention and can probably be counted on under these circumstances. There was no hemorrhage in any case. He advises to resect the roots above and below with the ones directly involved. The neuralgia was excruciating and rebellious. All the patients had become addicted to morphin or had attempted to commit suicide, and neurasthenia was frequent. He believes that this radiculalgia is a new clinical type. The hyperalgesia and attacks of pain recurred in his cases every five to ten minutes, but there were no coincident symptoms of a central or peripheral affection of the nervous system. His patients were under observation for years. The first was 34 years old, the neuralgia was of rheumatic origin and had persisted between eight and nine years. Recovery was complete after resection of the roots, as also in another similar case in a man of 48. Two other patients were syphilities, 35 and 52 years old. They refused operation and the affection continued a progressive course. Another syphilitic, 48 years old, was treated by partial resection of the roots and the result was a partial cure. In the sixth case the neuralgia was of traumatic origin and the intervention was limited to laminectomy which failed to relieve. In the three patients treated by resection of the roots lesions were found in the soft meninges definitely limited to the area of the roots incriminated by the symptoms observed. They were mostly fibrous and pulled on the root fibers and flattened the veins in the pia.

43. **Pyrogallic Acid in Urinary Affections.**—Minet has been very successful in relieving tuberculous and other cystitis, in chronic prostatitis and aseptic chronic urethritis, by instillation of 2 to 4 c.c. of an aqueous solution of 2 per cent. pyrogallol. He repeats the instillations two or three times a week and continues them for a long period. The bladder should be emptied and gently rinsed beforehand. These instillations soothe the pain and reduce the frequency of micturition while he never noted any indications of intoxication.

51. **Treatment of Pleural Effusions by Injections of Air.**—Vaquez has found the injection of a pint of filtered air a most beneficial measure in the cure of recurring pleural effusions. As the permeability of the pleura is much impaired by the pathologic process, ordinary air answers as well as a more concentrated gas. The mechanical pressure of the air prevents the reaccumulation of the fluid. In one of his patients the pneumothorax lasted three months without subsiding.

53, 54. **Chloruria and Phosphaturia in Disease.**—Achard has been studying the alimentary chloruria induced by ingestion of 10 gm. of sodium chlorid. He concludes that hypochloruria is due to the retention of the chlorids in the organism which accompanies all acute diseases. It is not necessarily dependent on disturbance in the eliminating function of the kidneys, even in case of acute and chronic interstitial nephritis. The differences in the elimination of the phosphates are much less pronounced and do not seem to follow any established rule.

56. **Oculo-Pupil Syndrome in Tuberculosis.**—Souques has noticed the syndrome revealing destruction of the pupil-dilating filaments of the sympathetic in cases of tuberculosis of the apex. The syndrome is familiar in neuropathology but not in connection with chronic tubercular lesions of the apex. The filaments in question pass very close to the upper cul-de-sac of the pleura and may easily become involved in the morbid process.

57. **Treatment of Chorea.**—Comby advocates as a sedative in chorea to wrap the child in a sheet wrung out of cold water and laid over a blanket, wrapping him from his feet to his neck and leaving him for thirty to sixty minutes. There are no contra-indications to this valuable sedative measure. He has had occasion to treat 240 cases of chorea and 90 recovered with merely simple hygienic measures, strict milk diet or milk and vegetables, no stimulants. Severer cases he treated with antipyrin or arsenic. He administered antipyrin in 70 cases, in the dose of 50 cg. a day to the year of age, not surpassing the maximum of 6 gm. The dose should not be fractioned, but given a gram at a time. He treated 54 others with arsenic in large doses for a short period and recommends this method as superior. He commenced with 10 gm. a day of a 1 per 1000 solution of arsenious acid, increasing by 5 gm. a day to a total of 30 and then decreasing in the same proportion. It is incorporated with a mucilaginous vehicle and a tablespoonful taken every two hours, each followed by a glass of milk. This dose is for children from 8 to 15. Younger children commence with 5 gm. and do not surpass the maximum of 20 or 25 gm. The children must be required to drink copiously while taking antipyrin or arsenic and be restricted to a milk diet. He emphasizes the necessity of good renal functions before this treatment is attempted, and warns against its use during hot weather when the child perspires freely, but the urine is apt to be scanty. Symptoms of intolerance are much more liable in these conditions. The antipyrin or arsenic treatment should not be applied for more than a week or twelve days at most. These large doses are less dangerous than smaller ones longer contin-

ued. His experience with this method of treatment has been extremely satisfactory. He lost only two of the patients. Death was due in these cases to endocarditis and he regrets that he did not inaugurate at once the vigorous arsenic treatment which he since has applied in severe cases.

58. **Indications for Trunecek's Serum in Arteriosclerosis.**—Merklen's experience testifies that Trunecek's serum is a tonic for the asthenia and hyperexcitability which are the result of the defective irrigation and nutritive alterations in the nervous system. It attenuates or banishes certain of the subjective symptoms which are distressing features of the condition. His results have corroborated those of Levi, mentioned below. The effect of the serum seems to be identical with that of Brown-Sequard's extract. It proved successful in 3 out of 5 cases of rebellious dyspnea, each connected with arteriosclerotic heart trouble. Its action here is probably due to direct influence on the centers of respiration. It also proved effectual in arresting cardiac neuralgia although true angina pectoris is not affected. None of the patients successfully treated with the serum had been benefited by a strict milk diet, repose and various drugs, previously administered.

67. **Treatment of Ozenatous Coryza by Injections of Paraffin.**—The ideal aim in the treatment of atrophic ozenatous coryza is to reduce the size of the nasal fossæ. Brindel has cured ten patients by interstitial injections of paraffin which does not melt at a temperature of less than 60 C. The injections were made in the inferior turbinates which were very much atrophied. He injected only 2 or 3 c.c. at a time, allowing two or three days before repeating the injection. The time has been too short to speak of positive cures, but the patients were all relieved at once and are apparently completely cured. Paraffin with this high melting-point hardens at once and stays where it is injected. The only inconvenience is that it is liable to harden at the tip of the needle. A large one must be chosen on this account. Brindel hopes that an electrically heated needle will be devised for the purpose.

69. **Treatment of Reflex Muscular Atrophy of Articular Origin.**—Zimmern warns that the treatment of simple reflex atrophy of articular origin should never be neglected. Massage is the best means of treatment when it is incipient, but once established, it requires systematic electric treatment in the form of rhythmical Faradization. This should be supplemented by active exercises adapted to the groups of muscles affected.

71. **Graduated Bladder Urine Separator.**—Cathelin's new instrument is described and illustrated in this article. As already mentioned in THE JOURNAL it was presented to the Académie de Médecine with appreciative commendation by Guyon, who had used it in twenty-two cases with perfect success. The separation of the urine from each ureter was complete. It did not cause the slightest pain even in patients with irritable bladder and with a capacity of only 40, 50 or 60 gm. In one case the bladder capacity was 30 gm., but the separator was tolerated without disturbance for forty-five minutes. The separating membrane is a flat bag of rubber tissue in which is a flexible loop spring that assumes a vertical position when the curved tip of the tube in which it is inserted rests against the pubis. The loop spring and membrane can be pushed into and out of the tube like a fan. The opening in the tube is below the bladder so that the separation is complete even into the posterior portion of the urethra. The projecting handle with which the separating membrane is pushed up and down is graduated to correspond to different sizes of bladders. The capacity of the bladder is determined beforehand by gently injecting fluid until a desire to urinate is induced. The membrane is pushed out of the tube to correspond to the size of the organ thus determined, and the light, flexible spring with its rubber envelope fits watertight against the lower walls of the organ as the patient reclines with legs slightly flexed. The sounds to collect the urine are in the tube when it is introduced, but do not project until all is in place. They are then pushed out of their special fenestræ and a small amount of water that was purposely left in the bladder serves as a siphon to start the flow of urine. The sounds are removed first, and then the separating wall is drawn down into the tube, which is like a No. 2 lithotrite. The instrument proved successful in a patient whose prostate was very much enlarged and in others whose bladder was exquisitely painful and sensitive. In three cases of total nephrectomy the tube corresponding to the missing kidney did not deliver a single drop of urine, demonstrating the perfection of the separation of the two halves of the bladder. In the illustration showing the instrument in place—the front bladder wall removed—it looks as if a palm leaf fan had been inserted in the bladder from above, the handle in the urethra.

72. **Trunecek's Inorganic Serum Treatment for Arteriosclerosis, Etc.**—Levi reports the further history of the cases of arteriosclerosis cured by this means as described in THE JOURNAL of Feb. 15, 1902, p. 484. About five to ten months have elapsed and there has been no recurrence of the symptoms in any case. He also reports a number more and states that he has been equally successful when he administered the alkaline salts in rectal injections or in a powder by the mouth. He slightly alters the formula for the "mineral powder" as he calls it, using a mixture of 10 gm. of sodium chlorid; 1 gm. of sodium sulphate; .75 gm. each of calcium and magnesium phosphate; .40 gm. sodium carbonate and .30 gm. sodium phosphate. This makes thirteen powders; each contains as much salts as 150 c.c. of blood serum. It is taken in a tablespoonful of water an hour before breakfast, and, if necessary, a second powder before lunch. It never caused any inconveniences except slight transient diarrhea in 2 cases. The rectal injections were of the undiluted serum, commencing with 5 c.c. and increasing by this amount every second day until the dose of 30 to 40 c.c. was reached. Among the patients treated with the powder alone was a man of 45, partially paralyzed in the legs for five years, subject to headache from childhood, knee-jerk exaggerated, epileptoid tremor and symptoms of impending paralysis in the right hand with tendency to vertigo. He has taken 125 powders and can now walk without a cane for an hour without undue fatigue. The improvement has been gradually progressive. Another patient had incomplete spasmodic hemiplegia, epileptoid tremor and exaggerated tendon reflexes. Improvement was manifest after a single powder daily for a week. An arteriosclerotic man of 57 with cerebral claudication, hypertrophy of the heart, tense pulse, severe headache almost continuous for ten years, defective memory and sight, was remarkably improved after taking forty powders. Memory, sight and gait became normal and the headache almost completely vanished. The disappearance of the headache is one of the almost constant results of this treatment.

74. **Accidents of Lumbar Puncture.**—Milian states that lumbar puncture alone is liable to be followed by the symptoms observed in some cases after spinal cocainization. The headache, nausea, etc., are therefore due to the puncture rather than to the cocain. He relates a number of instances personally observed showing the seriousness of the accidents that may follow simple puncture. In one case there was an actual apoplectic stroke followed by nausea, vertigo and headache for a week. The subject was a neurasthenic young man. Fürbringer, Lichtheim and Krönig have reported cases of sudden death after lumbar puncture, but in Germany much larger amounts of cerebrospinal fluid are withdrawn than is the practice elsewhere, as much as 100 to 150 c.c. in some instances, reducing the intraspinal pressure from 420 to 180 mm. Experimental research has shown that withdrawal of such large amounts causes in dogs chromatolysis and small apoplectic foci throughout the entire extent of the cerebrospinal axis. Milian describes the case of a young syphilitic woman who had suffered from headache for a year. About 6 to 7 c.c. of cerebrospinal fluid were aspirated by lumbar puncture. The headache became at once excruciating, accompanied by nausea, vertigo, incessant vomiting, filiform pulse and a fatal syncope seemed imminent. These symptoms subsided after a week. A young man suspected of hereditary syphilitic antecedents as the origin of occasional attacks of convulsions, was treated by lumbar puncture. He returned to his work without experiencing any disturbances, but the next morning vertigo, vomiting and headache developed so severe that he was confined to bed for five days.

The accidents are evidently due to the disturbance in the balance of the osmotic tension and the pressure of the cerebrospinal fluid. They can be absolutely prevented by observing the precaution to allow the fluid to flow spontaneously. Never aspirate it, except possibly the first drop or two to start the flow. Use a very small needle, and never withdraw more than 1 or 2 c.c., which is amply sufficient for all diagnostic purposes. Suspend the operation at the slightest complaint from the patient, and insist upon the dorsal decubitus for three or four hours after the puncture. Recumbency is the best and only treatment for declared accidents, and it is rational to suppose that lowering the head and raising the feet would aid in combating them, in connection with injections of ether and caffein. Even with all precautions a slight headache is almost constant, but this trifling drawback should not deter from the great advantages to be derived from lumbar puncture in case of dubious diagnosis. Antipyrin has never proved effectual against the headache.

75. **Are There Clinical Localizations in the Internal Capsule?**—Marie reports that there is no exclusive sensory area in the internal capsule in man. Also that there is no persisting segmentary localization in the internal capsule. These announcements are contrary to the dicta of anatomists and physiologists, but are the result of careful clinical observation confirmed by postmortem findings. He describes his cases in detail. They testify to the fact that even severe lesions of the capsule and cortex may be unaccompanied by hemianesthesia. All the descending motor fibers in the capsule are inextricably blended by means of their collaterals, and wherever the focus, hemiplegia instead of monoplegia inevitably results. A lesion limited to the internal capsule entails degeneration of the entire area of the pyramidal tract in the medulla and spinal cord.

88. **Cystic Tumors in Peritoneum.**—Blum reviews 128 works on this subject, including a number of inaugural theses. The youngest patient described was 4 months, the oldest 77 years. The cysts may be embryonal or congenital, or originate in the lymphatics or in congestion in the chylopoetic system from obliteration of the thoracic duct or large chyle vessels, or they may be due to tuberculosis of the mesenteric glands. The cysts are accompanied by attacks of pain in the umbilical region, radiating toward the back and spine. They may be elicited by abrupt movements of the trunk, pressure on the tumor, changes of attitude or by exaggerated peristalsis in consequence of digestive disturbances. The pains are accompanied usually by extreme constipation, suggesting intestinal occlusion. Blum himself ascribes the pains to axial torsion of the small intestine. The tumor is characteristically movable in most cases. The area of dulness over it is usually separated from the dulness over the neighboring organs by a resonant zone. Between the lower pole of the tumor and the symphysis there is generally a strip of resonance which is often decisive in the differentiation of these cysts from tumors of the genital organs. Ileus was the indication for operation in 16 of the 73 cases operated on. The axial torsion is probably due to shriveling of the root of the mesentery. The diagnosis is based on the location of the tumor in the umbilical region, the elastic fluctuation, the movability, the typical pains induced by axial torsion of the small intestine, and the symptoms of occlusion. Occasionally the cysts may exist for years without causing disturbance, but as a general rule they prove fatal before long if unoperated, either from cachexia, peritonitis or occlusion. The mortality in the 73 cases operated on was high when the intervention was postponed until symptoms of occlusion had developed (69 per cent.), while it was only 25 per cent. among the patients operated on between attacks.

90. **Paraffin as a Protecting Dressing.**—Springer has found that a thin sheet of paraffin is an excellent and inexpensive substance for covering a wound to prevent adhesion of the gauze dressings, etc. It does not melt nor become rancid while it retains its shape and fits close to the parts without sticking to either the gauze or the wound. He drops a lump of paraffin in a broad, shallow vessel of hot water and boils it for ten minutes or more. He then sets the vessel in a pan of cold water until the paraffin, which spreads out on the surface of the water in a thin pellicle, has hardened. Warm water is then substituted in the lower vessel and the sheet of paraffin becomes flexible. He perforates it as desired with a hot needle and cuts with scissors a sheet of the exact shape and size required, transferring it to the wound with two pairs of forceps, applying the surface next the water to the wound. It is free from the slightest irritating action while it can be effectually sterilized. As it does not soak into the gauze the latter retains its absorbing power unimpaired. Springer adds that it allows the passage of the light, which may prove to be an additional point in its favor. He usually calculates about 1 to 2 c.c. of paraffin to a water surface of 50 sq. cm.

91. **Ultimate Results of Forcible Reduction of Spondylitic Hump.**—Vulpius reported at the first German Congress of Orthopedic Surgery which met at Berlin April 1, that five years have elapsed since he applied forcible reduction of the hump on two patients, according to Calot's directions. The result is most excellent, although both were very severe cases, complicated with large abscesses. The contention that a cure was not possible on account of the gap left after straightening the spine and the impossibility of repair, has been refuted by experience. Time has demonstrated as Joseph has proclaimed, that the vertebræ above the hump sink down into the abnormally soft, diseased vertebræ and the bones become consolidated, obliterating the gap. The spine is a little shorter, but there is no hump, and both the boys are clinically cured of the deformity and also of the fundamental tuberculous affection. Vulpius observes in this "auto-abstract" that he has no desire to rearouse enthusiasm in this method of treatment, but merely to point out that it is possible to attain permanent success with it.

92. **Spatula Forceps for Laparotomies.**—The blades of Bakes' forceps suggest half opened pea pods in shape. They fit over the edges of the wound and spread them apart, thus answering the purpose of hooks and retractors. They are constructed to spread most when the handles are close together. A weight attached holds them automatically in place when once applied.

98. **Relations Between the Cure of Tuberculosis and the Joint in the Costal Cartilage.**—Freund has recently called attention to the remarkable difference in size of the first costal cartilage in different persons. When it is unusually short, which can be recognized on the living subject and in the cadaver, this reduces the size of the upper costal ring, prevents the expansion of the upper portion of the lung and interferes with normal circulation, thus reducing the resisting power of the parts and predisposing to local and general morbid processes. The first costal cartilage is subjected to such strain in some cases that it becomes inflamed and weakened and finally tears across, thus forming what practically amounts to a joint in the cartilage. As soon as this new joint is formed the hitherto rigid cartilage is able to yield, the lung to expand, and the circulation and other functions of the parts approximate normal. The result is that tubercular and other morbid processes generally soon heal. Freund has established these facts beyond question by extensive researches. He therefore proclaims that the first costal cartilage should be cut across to form a joint when it is abnormally short and rigid and there are symptoms of a recurring apical affection. He asserts that it is a simple, harmless operation, while the benefits to be derived are incalculable in many cases.

99. **Tetanus After Injection of Gelatin.**—Krug has previously reported a fatal case of tetanus following an injection of gelatin to arrest hemorrhage after extraction of a tooth. He has been able to collect five other fatal cases and one in which the patient recovered. The gelatin was injected on account of hemorrhage after removal of a cancer of the larynx or rectum, extraction of a tooth or stab-wound of liver or hematuria. He comments that as the benefit from these injections is by no means constant, the danger of tetanus should deter from its use except in rare cases.

104. **Treatment and Origin of Scoliosis.**—More than 200 pages are devoted to this communication from Bramann's clinic, with 115 fine cuts of patients, apparatus, experiments, etc., and a review of 202 articles on the subject. Wullstein

succeeded in inducing typical scoliosis in dogs by an elastic contrivance applied over the abdomen to bring the roots of the fore and hind legs closer together. In five or six months the spine was permanently deformed and deviated as much as 3.5 cm. from a straight line. The deformities, dislocations and compressions of the internal organs were most striking, but the most instructive result was the characteristic, typical and pronounced alterations in the way of torsion of the spine even with comparatively slight lateral deviation, and the wedge-shaped aspect of certain single vertebræ. This corroborated what he has always contended, namely, that treatment of scoliosis should be addressed mainly to correcting the torsion. It is particularly necessary in the lumbar or dorso-lumbar forms of scoliosis, and can be accomplished by special measures, twisting the seat, making one half of the seat lower than the other, and by direct pressure with a pad, thus supplementing the benefits of extension which removes the cause of the scoliosis by relieving the pressure. Tests on the cadaver showed that in forcible extension the intervertebral discs adjacent to the wedge-shaped vertebræ stretched to twice or three times their previous width on the side toward the concavity while on the side of the convexity they retained their previous width or were pressed narrower. The weight of pressure is transferred from the concave to the convex side and treatment, sufficiently prolonged, will restore normal conditions.

112. **Galvani's Method of Treating Tuberculous Peritonitis.**—Pernot has collected 920 cases of tuberculous peritonitis treated by laparotomy. The mortality has been 4 per cent. of post-operative deaths and 11 per cent. due to the progress of the disease, while 85 per cent. were cured. These figures include Galvani's series of 134 laparotomies in which the percentage of recoveries was the same. According to recent statistics collected by Pic, only 37 recover in 100 cases treated by medical measures alone. The laparotomy aids the natural curative powers of the organism, and Galvani proclaimed that it was necessary to repeat the laparotomy until a definite cure was attained. He operated two, three and four times on the same subject in a number of cases, and one little patient was not cured until after five laparotomies. He proclaimed that repeated laparotomies are the heroic and sole means of saving desperate cases. He did not hesitate to reopen the abdomen in twenty to thirty days if he found that the progress was not satisfactory, without waiting for the patient to become too much debilitated, or the fluid to reassemble or appearance of more serious symptoms. He sought to profit by the general toning up of the system which followed the laparotomy, and undertook another before the stimulation had entirely subsided. In order to prevent subsequent hernia, he entered the abdomen on one side of the rectus, pushing the latter aside. The harmlessness of a laparotomy when restricted to the minimum of surgical traumatism is thoroughly established, and the cures surpassing all expectations in the most severe forms of tuberculous peritonitis, fully confirmed the advantages of repeated laparotomies in his experience. He cured 70 per cent. of his cases with diffuse ascites, and only one death has occurred among the 6 patients with fibro-adhesive tuberculous peritonitis treated by two to four laparotomies. He also succeeded in curing or materially improving 57 per cent. of all cases of the dreaded fibro-caseous variety. Handfuls of caseous masses were extracted from the abdomen in some of these cases, and the success obtained was truly remarkable. Repeated laparotomy should therefore be accepted as the standard treatment of fibro-caseous tuberculous peritonitis as it always proves palliative and frequently curative even in the most apparently doomed cases. Gatti has confirmed by experimental research that a first incision is not always sufficient to stimulate the tissues to repair, while repeated laparotomies are followed by complete retrogression of the experimental lesions. Pernot warns that the local signs do not always correspond to the virulence of the infection, and that the general condition must be the guide when to operate again. There are no contraindications except possibly advanced tuberculosis of other organs. Galvani has operated more than once in 22 cases, and other surgeons in 16 more, thus affording a basis of 38 cases for the promulgation of the benefits of repeated laparotomy. Galvani merely opened the abdomen and flushed it with a 1 per 4000 solution of sublimate followed by lavage with sterilized water at 113 F. In case of adhesions, purulent pockets, etc., he removed them and extracted the caseous masses that could be detached with the fingers, closing the abdomen with suture in a single plane.

113. **Diabetes Mellitus.**—De Renzi advises the use of levulose as a substitute for cane sugar in diabetes, but the sugar in the urine must first be reduced within physiologic limits by substitution of green vegetables in the diet. When this is accomplished, the administration of 25 to 100 gm. levulose does not induce glycosuria, as happens when it is taken on top of previously existing glycosuria. Fruit tentatively allowed is frequently tolerated by diabetics in comparatively large amounts. Even in severe cases as much as 500 gm. of nuts, strawberries, oranges or plums are tolerated; 250 gm. of apples or pears, or 100 of peaches or apricots. The diet in diabetes should be first and chiefly green vegetables; secondly, meat, fish and milk foods (latticini), avoiding liver, possibly, on account of the glycogen it contains; thirdly, fruits and fats. Not until later, after the patient is improved, should milk, beans and peas be allowed. Milk has been advocated in diabetes, but De Renzi considers it indicated only in case of heart or severe kidney disease. Under all other circumstances milk should not be allowed until after improvement has been gained, and then only sparingly. The ordinary carbohydrates can be permitted very gradually after the foregoing list has been accepted. Restriction to green vegetables with more or less meat is usually sufficient to banish the glycosuria. Green vegetables are rich in the salts of the organic acids which in the organism separate into the carbonates. They also supply the alkalies needed for the neutralization and elimination of the acids that are formed. The ordinary diet of a diabetic in his service is five soups or dishes of green vegetables, and five pieces of meat, representing a total of 300 gm., five eggs and a pint of wine. This supplies 2104 calories, and on account of the exceptional power of assimilation in diabetics is sufficient for them. He has established by practical experience that diabetics assimilate much more perfectly than patients with tuberculosis. The meat can be dropped from the above menu if necessary and gradually resumed. He has never had a case in which the glycosuria did not vanish on this diet. Experiments on dogs showed that those which accepted a diet of green vegetables did not have glycosuria after the pancreas was removed, and the glycosuria vanished on a diet of green vegetables instituted after removal of the pancreas. Supplementary tonic measures are always useful, a trip to the country, etc. Medicines are of little benefit except to the manufacturers. Electricity in the form of Tesla's current increased the sugar in the urine to pathologic proportions in his experience.

117. **Treatment of Scrofulosis of the Abdomen.**—De Giovanni applies this term to an abnormal development of the abdominal lymphatics with hypoplasia of the arterial system and exaggerated development of the venous system. In its simplest form it causes symptoms of habitual dyspepsia, intestinal catarrh, congestion of the liver and torpidity of the urinary function, forming an auspicious soil for the most varied and chronic affections of the abdominal segment, chronic peritonitis, cirrhosis of the liver, etc. In case there are no organic alterations, he treats the condition by fourfold measures: 1, stimulation of the venous current by leeches to the anus, repeated at intervals of fifteen to twenty days; 2, stimulation of the innervation of the circulation and viscera by rubbing the anterior wall of the abdomen with croton oil. These measures usually banish the symptoms of irritation and the meteorism. They are supplemented, 3, by a starvation diet, dry and mainly nitrogenous, associated with administration of hydrochloric acid if there are symptoms of intestinal putrefaction, with purgatives at first and enemata afterward, in order to modify the metabolism and digestive functions. 4. The secretions are favored by tepid baths, sulphur or iodin as indicated, massage, and if the patients are in good condition, the saline-bromin-iodized Abano waters.

120. **Diplococcus Endocarditis of Right Heart.**—Strada has observed diplococcus endocarditis in 9 out of a total of 85 cases of pneumonia that came to autopsy. In 6 the process was limited to the left heart and in 3 to the right. The latter were men of 62 or 74 years of age, and the conditions in the right heart or vicinity were such as to diminish the local resistance.

129. **Cancer Research.**—Jensen reports experiments with malignant neoplasms inoculated from mouse to mouse, and with serum derived from rabbits injected with a suspension of ground cancer tissue. He was unable to cure or immunize mice against cancer infection by injections of this prepared serum. But he noticed that the development of the cancer was influenced to a remarkable extent. The neoplasm rapidly perforated through the hide and detritus was found in the interior to an extent far beyond anything of the kind observed in the control cases. He remarks in conclusion that it seems as if the cancer cells in his experiments had acquired a faculty of unlimited proliferation and are not subject to the general laws of biology. The cells he has been using in his tests are in fact the descendants of cells from the malignant neoplasm on the mouse first killed, about a year ago. They may be regarded as artificial "cell cultures" similar to bacterial cultures, and the tumors as "cell infections" similar to a parasitic affection.

New Patents.

Patents granted June 17 and 24, of interest to physicians, etc.:

702,759. Water bag. Tony L. Allegretti, Chicago.
702,719. Soda-water dispensing apparatus. Charles A. Geddes, Philadelphia.
702,789. Dilator. Charles G. Gibson, Sioux City, Iowa.
702,435. Strength tester. Gerhard Jansen and H. Messmann, Chicago.
702,800. Artificial ear drum. Ulrich Kleiner, Brookline, Mass.
702,443. Surgical instrument. Louis R. Kratzmuller, Chicago.
702,570. Combined applicator and syringe. Leonard J. Lohlein, Lusk, Wyo.
702,741. Detachable fastening for vaccination shields. Ellis S. Oliver, Newark, N. J.
702,820. Massage machine. Charles Pfanschmidt and J. Siefert, Chicago.
702,472. Surgical forceps. Louis M. Pignolet, Orange, N. J.
702,482. Machine for filling and wrapping powders. Frank A. Robirson, New York City.
702,591. Powder filling and folding machine. Frank A. Robinson, New York City.
702,603. Bed-pan. Emily A. Stockdale, Washington, D. C.
702,752. Electrosurgical instrument. Reinhold H. Wappler, New York City.
703,221. Fountain spittoon. Willis E. Allen, Baltimore.
703,240. Obtaining gelatin-yieldable liquids. Eugene R. Edson, Cleveland, Ohio.
703,290. Vaccination shield. Harry K. Mulford, Philadelphia.
703,351. Warming bag. Terence O'Donnell, Kansas City.
702,997. Surgical dressing packer. James M. Pugh, Indianapolis.
703,156. Artificial foot. Matthew Smith, Liverpool, England.
703,095. Hernial truss. George H. Stewart and A. L. Wiseman, Topeka, Kan.
703,319. Hemoglobinometer. Theodor W. Tallqvist, Borga, Russia.
703,100. Massaging instrument. Julius B. Wantz, Chicago.
703,103. Syringe nozzle. Henry E. Weber, Canton, Ohio.
703,107. Syringe nozzle. Charles S. Wood, Chicago.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., June 26 to July 2, 1902, inclusive:

John R. Hicks, contract surgeon, leave of absence extended one month.

William V. Kellogg, contract surgeon, relieved from further duty in the Division of the Philippines, and on his arrival at Fort Leavenworth, Kan., with the Sixth Infantry, will proceed to Fort Sill, Okla., for post duty.

Julius C. LeHardy, contract surgeon, from Fort Wood, N. Y., on the arrival of Contract Surgeon Newlove, to proceed to San Francisco, en route for service in the Division of the Philippines.

George Newlove, contract surgeon, relieved from further duty at Fort Sill, Okla., and on the expiration of his present leave of absence will proceed from Philadelphia to Fort Wood, N. Y., for duty at that post.

Merton A. Probert, contract surgeon, member of a retiring board to meet at Omaha.

Charles Smart, colonel, assistant surgeon-general, detailed president of the Faculty of the Army Medical School vice Brigadier-General William H. Forwood, surgeon-general, who is hereby relieved.

Paul F. Straub, captain and asst.-surgeon, member of a retiring board to meet at Omaha.

Thomas J. Strong, contract surgeon, now at San Francisco, is relieved from further duty in the Division of the Philippines and will report for duty in the Department of California.

William J. Wakeman, major and surgeon, U. S. A., detailed a member of an examining board at New York City, to relieve Capt. John S. Kulp, asst.-surgeon, U. S. A.

Charles K. Winne, lieutenant-colonel and deputy surgeon-general, retired from active service, June 30, 1902, on account of having reached the age limit.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending July 5:

P. A. Surgeon B. R. Ward, resignation accepted, to take effect June 28.

Medical Director G. U. Gravatt, detached from duty as President of the Medical Examining Board, Naval Laboratory, New York, and to duty at the Naval Museum of Hygiene, Washington, D. C.

Medical Inspector W. A. McClurg, detached from the *Olympia*, and ordered to the *Kearsarge* as fleet surgeon of the North Atlantic Station.

Surgeon H. E. Ames, detached from the *Kearsarge*, and ordered to the *Olympia*.

P. A. Surgeon F. L. Pleadwell, detached from the Olympia, and ordered to the *Kearsarge*.

P. A. Surgeon G. L. Angeny, detached from the Naval Laboratory, New York, and ordered to the *Lancaster*.

P. A. Surgeon E. Thompson, detached from duty with the Marine Guard, Charleston, S. C., and ordered to the Naval Laboratory, New York.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended July 5, 1902:

SMALLPOX—UNITED STATES.

California: San Francisco, June 15-22, 2 cases.
Colorado: Denver, June 14-21, 3 cases.
Illinois: Chicago, June 21-28, 7 cases.
Indiana: Indianapolis, June 21-28, 3 cases; Muncie, June 1-30, 2 cases; Terre Haute, June 21-28, 2 cases.
Iowa: Ottumwa, May 31-June 28, 10 cases.
Kansas: Wichita, June 21-28, 1 case.
Kentucky: June 21-28, Covington, 4 cases; Lexington, 1 case.
Louisiana: Shreveport, June 14-21, 2 cases.
Massachusetts: June 21-28, Boston, 8 cases, 2 deaths; Cambridge, 7 cases, 7 deaths; Everett, 2 cases; Lowell, 1 case; Melrose, 1 case; Newton, 2 cases; Somerville, 4 cases, 1 death; Taunton, 2 cases.
Michigan: Detroit, June 21-28, 4 cases; Grand Rapids, June 7-28, 5 cases.
Missouri: St. Louis, June 22-29, 6 cases.
Montana: Helena, June 1-30, 1 case.
Nebraska: Omaha, June 21-28, 7 cases; South Omaha, June 23-30, 18 cases.
New Hampshire: Nashua, June 22-29, 11 cases.
New Jersey: Newark, June 21-28, 20 cases, 5 deaths.
New York: New York, June 21-28, 46 cases, 10 deaths.
Ohio: Ashtabula, June 14-21, 2 cases; Cincinnati, June 20-27, 1 case; Cleveland, June 21-28, 17 cases, 5 deaths; Dayton, June 21-28, 3 cases; Toledo, June 21-28, 3 cases, 2 deaths.
Pennsylvania: June 21-28, Altoona, 1 case; Johnstown, 9 cases, 2 deaths; McKeesport, 1 case; Philadelphia, 15 cases, 1 death; Pittsburg, 13 cases, 4 deaths.
Tennessee: Memphis, June 7-28, 2 cases.
Utah: Salt Lake City, June 14-28, 6 cases.
Virginia: Petersburg, June 1-26, 2 cases, 1 death.
Washington: Tacoma, June 14-21, 1 case.
Wisconsin: Green Bay, June 22-29, 2 cases; Milwaukee, June 21-28, 3 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, April 26-May 10, 6 cases, 2 deaths.

SMALLPOX—FOREIGN.

Austria: Prague, June 7-14, 10 cases.
Canada: Quebec, June 7-14, 8 cases, 1 death.
China: Hongkong, May 3-17, 5 cases.
France: Paris, June 7-14, 1 death.
Great Britain: Belfast, June 7-14, 1 death; Birmingham, June 7-14, 3 cases, 1 death; Glasgow, June 13-20, 2 cases; Liverpool, June 7-14, 3 cases; London, June 7-14, 157 cases, 29 deaths; New Castle-on-Tyne, May 31-June 14, 1 case; Sunderland, June 7-14, 1 case.
India: Bombay, May 27-June 3, 7 deaths; Calcutta, May 24-31, 4 deaths; Karachi, May 24, 3 cases, 1 death.
Italy: Palermo, June 7-14, 4 cases.
Mexico: City of Mexico, June 15-22, 1 case, 2 deaths; Vera Cruz, June 14-21, 1 case.
Russia: Odessa, June 7-14, 5 cases, 2 deaths.
Straits Settlements: Singapore, May 3-10, 1 death.

YELLOW FEVER.

Mexico: Vera Cruz, June 14-21, 28 cases, 12 deaths.

CHOLERA.

China: Hongkong, May 3-17, 71 cases, 65 deaths.
India: Bombay, May 27-June 3, 1 death; Calcutta, May 24-31, 72 deaths; Karachi, May 25-June 1, 4 cases, 1 death imported.
Straits Settlements: Singapore, May 3-10, 99 deaths.

PLAGUE.

China: Hongkong, May 3-10, 55 cases, 52 deaths.
India: Bombay, May 27-June 3, 133 deaths; Calcutta, May 24-31, 132 deaths; Karachi, May 25-June 1, 72 cases, 60 deaths.